1939.

QUEENSLAND.

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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE AND STOCK

FOR

THE YEAR 1938-1939.

PRESENTED TO PARLIAMENT BY COMMAND.

BRISBANE:
BY AUTHORITY: THOMAS GILBERT HOPE, ACTING GOVERNMENT PRINTER.

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REPORT OF THE DEPARTMENT OF AGRICULTURE AND STOCK FOR THE YEAR 1938-39.

TO THE HONOURABLE THE SECRETARY FOR AGRICULTURE AND STOCK.

Sir,—I have the honour to present herewith the report of the Department for the year ended 30th June, 1939.

SEASONAL CONDITIONS.

With the exception of a relatively small though very important pastoral area in the Central-West, good seasonal conditions were the experience of the year throughout Queensland.

The departmental year opened with bright prospects generally, the effect of widespread autumn rains. Well distributed showers in July ensured a good spring in most districts, and for farmers the outlook had seldom, if ever, been better. After one of the best winters in the history of the State, frequent and well spaced rains prevailed in August. In early spring, which was the best experienced for some years, inland pastures were, in the main, satisfactory and the agricultural prospects uniformly good. These favourable conditions continued in October, which was a month of abnormal rainfall in many farming districts. November weather also was favourable over the eastern half of the State, especially in the Darling Downs and Burnett districts. Although weather conditions on the Maranoa and on the Central Highlands were good, patchy rainfall and extreme dryness in some districts were experienced further inland. Excellent seasonal conditions for farmers was the general experience in December, when storm rains were frequent and heavy in many districts. In some areas hot and dry weather prevailed, but good rains late in January restored the satisfactory seasonal outlook in most coastal regions and over the greater part of the sub-tropical interior.

The western and north-western pastoral country, where the need was great, received heavy general falls in February. During that month, however, most southern farmlands had little rain. The summer was one of intense heat, especially in the far interior. In places, temperatures exceeded 100 degrees F. for as long as forty-one days in succession. Rain brought relief to many parched areas. A considerable portion of the Central-West, however, continued very dry. March was a wet month in nearly every part of the State, and rains were generally in excess of district averages for the period. April was another month of widespread precipitation. May rainfall was light, but most pastoral holdings had by then become well grassed, with an assurance of sufficient feed to carry stock until summer. Fresh dairy pastures enhanced the prospect of a record year in dairy production; and in the farmlands there were ample reserves of subsoil moisture to sustain crops still growing.

Out-of-season tropical influences in mid-June produced the best winter rain for four years, and which benefited every division of the State. In the wheatgrowing districts, good conditions were established for the main crop. Pastures were freshened and good feed throughout the winter is now assured.

The arrival of winter in Queensland has rarely been attended with such uniformly good prospects. In the western pastoral country there has been a further shrinkage in the few remaining dry belts. In the south-western grazing lands conditions were never better, and all the far western districts are in good order. Around Cunnamulla, Mitchell grass was reported to be from 12 to 18 inches high after the April rains, while grasslands on the Darling Downs were likened to wheatfields. Large numbers of stock were then able to return from agistment to their home pastures along stock routes on which grass and water were in abundance.

In agriculture and dairying particularly, the year has been one of record production.

THE PASTORAL INDUSTRY.

The statistical position of the pastoral industry as at 1st January, 1939, is shown by the following preliminary figures compiled by the Government Statistician:—

Horses.—The 1938 estimate was 445,000, as compared with 441,000 in the previous year.

Cattle.—A slight increase in the number of cattle is reported, the estimate being 6,000,000. The previous year's total was 5,959,165.

Sheep.—There has been a slight increase in the number of sheep in the State, the estimate for the current year being 22,500,000, as compared with 22,497,970 in the previous year.

After increases of 2 and 2½ millions respectively, in the previous two years, following the low drought numbers of 1936, sheep seem to have remained fairly steady in numbers; and the estimate for the beginning of 1939 is practically the same as that for a year earlier. The estimated number is about 600,000 less than the highest number ever recorded—23,129,919 in 1915.

Pigs.—The preliminary figure for pigs is 320,000, which is about 37,000 more than for 1938, and 15,000 more than the previous highest number of 304,888 on 1st January, 1936.

The movement for herd improvement advanced considerably and many stud cattle were brought to Queensland for that purpose during the year, chiefly from the Southern States.

Greater interest is being shown in native grasses, particularly in respect of their nutritive value, and also in the need for applying more widely the principles of sound pasture management.

The buffalo fly, although it has spread eastwards to the Flinders River, has not yet advanced beyond the boundaries of the declared infested area. Spraying is being enforced immediately before cattle are trucked.

Ephemeral fever was more prevalent, chiefly among young stock which, probably, had not previously been attacked and, consequently, had not developed any degree of immunity.

The area at present under tick cleansing conditions approximates 532 square miles. Re-infestation in clean areas has been reduced, although weather conditions generally were favourable for ticks.

There was a decrease in several classes of stock sold at the Cannon Hill saleyards, but there was a considerable increase in the sale of fat lambs.

Fat stock values averaged for chiller bullocks 28s. 11d. per cental; trade bullocks, 28s.; cows and heifers, 26s. 3d. For other classes of stock, the average values per lb. were:—wethers, 2.98d.; ewes, 2.7d.; lambs, 5.73d.; calves, 3.17d.; and swine, 6.29d.

The strict observance of *The Slaughtering Act* is reported, and retail establishments have been kept in accordance with legislative requirements.

Bacon factory killings were the highest since the 1935-36 period, when a total of 383,207 was attained. The increase over the slaughterings of the previous year was 61,380. The numberof pigs exported also increased.

Of the total meat exports from Australia to the United Kingdom for the year—217,629 tons—Queensland contributed 112,826 tons, or 51.84 per cent.

Legislative provision was made in the course of the year for the grading and branding of beef for consumption within the metropolitan area. Carcases graded either first or second must now have a brand imprinted on them indicating the grade in which they have been placed. Beef of a lower grade than second is left unbranded. This system should prove advantageous to both buyers and producers of good quality cattle.

The immediate outlook for the beef industry is bright, but the Department has urged a continuance of effort to improve the quality of meat products so that, whatever may be the outcome of the present international situation, Queensland meat exports will hold a good position in markets abroad.

Horses exported overseas numbered 1,464.

Sheep and Wool.—Good seasonal conditions, increased carrying capacity of the freshened and re-established pastures, and the replenishment of water supplies were generally the outstanding experiences in the pastoral districts of the State. Parts of the Central-West, however, remained dry, but as agistment country was available at no great distance losses of stock were, comparatively, inconsiderable.

As a result of the good season, an increase in lambing percentages is expected.

The importance of flock improvement has been stressed, and the classing of breeding stock also has been a salient point in departmental instruction. Practical demonstrations on other points in flock management were also given as a regular instructional service.

Fat lamb production has increased as an outcome of the assistance given to the industry by the introduction of suitable breeding stock from the Southern States and New Zealand. The most satisfactory experience of the year was a definite improvement in type as well as an increase in the number marketed. In country beyond the limits of the recognised lamb raising regions, Corriedale, Border Leicester, and Dorset Horn are being introduced to a greater extent than formerly for the building up of flocks of required crosses in order to meet a growing demand for suitable ewes.

More than 400 sheep of British breeds and of the Corriedale breed were purchased and distributed on loan to 105 farmers, chiefly on the Darling Downs.

The average price obtained for fat lambs of all crosses was 17s. 6d. Prices varied with seasonal circumstances, but at all times they were profitable to the grower.

Queensland fat lamb raisers gained the distinction of second place in the Smithfield All-Australian fat lamb competition.

Special sheep-breeding trials are now in progress.

Wool prices continued at a low level. At the Brisbane sales, 538,087 bales were sold at an average of £14, equal to 10.56d. a lb.

Under the farmers' wool scheme consignments from 175 growers aggregated 705 bales, the highest number handled in one year.

Conditions were in favour of widespread blowfly infestation, but heavy losses were averted by careful flock management. Apart from parasitical troubles incidental to the season, the health of flocks was generally good.

Brands.—Registrations of horse and cattle brands and earmarks increased, but there was a slight falling off in number. Fees collected totalled £2,377, which was £70 in excess of the collections in the previous year.

Inspectional Services.—Officers entrusted with the supervision of the provisions of *The Diseases in Stock Act, Slaughtering Act,* and *Brands Act* have done excellent service in co-operation with the veterinary staff.

Registration of Veterinary Surgeons.—New registrations numbered 16; and there are now 87 names on the Register.

Animal Health.—Animal health services have been well maintained, and the work of the stations at Yeerongpilly and Oonoonba has been co-ordinated. Research into problems relating to ephemeral fever, sawfly poisoning of stock, tick fevers, parasites of stock, and poisonous plants was continued and much useful work accomplished.

As the result of cattle fattening observations mentioned in the last report, it has been shown that introduced pastures on tropical coastal lands will not only fatten stock, but also will produce prime beef—approximately 80 per cent. being graded (most of it actually exported) as first-grade chilled beef. Because of the fact that these pastures can be maintained in the green state throughout the year, it is possible to so arrange grazing that cattle can be turned off in any particular month. Thus, apparently, coastal fattening affords an opportunity of marketing stock at times when fat cattle for chilling are ordinarily unavailable in the North. Observations are being continued, and it has been possible to arrange for more cattle to be fattened on other properties than those utilised previously.

As necessity arose investigators of the Department of Agriculture and Stock, the Queensland Meat Industry Board, and the veterinary staff of the Commonwealth Department of Commerce collaborated in a fine spirit of co-operation for the public benefit. A scheme for the co-ordination of the forces of all organisations associated with improvement of animal production is now in prospect.

Animal dietetic and bio-chemical work formed an important section of the animal health work. In a broad programme of investigation, problems of sufficient economic importance to merit systematic exploration were studied.

A series of drought-feeding trials has been designed under conditions representing serious seasonal adversity. It is expected that when these experiments are concluded, an examination of data obtained will enable standard recommendations to be made for drought feeding in Queensland merino country.

A substantial increase in enquiries indicates that producers are appreciative of the benefits of sound stock feeding practice.

The annexed reports of the Directors of the Animal Health Stations at Yeerongpilly and Oonoonba, and of the Veterinary Adviser, contain comprehensive accounts of the services rendered to stockowners throughout the year.

Stallions Registration.—In support of the claim that the horse breeding industry has benefited considerably as a result of the introduction of "*The Stallions Registration Acts,* 1923 *to* 1934," members of stallion boards operating during the year under review reported very favourably, not only on the quality of sires produced for examination, but also on the number of really high-class horses met with in the course of their itineraries in the gazetted stallion districts.

Nine stallion boards operated during the year and stallion board members were actually engaged for 59 days in the examination of stallions. The area covered by members of the stallion boards is indicated by the distance travelled between parade centres, which totalled 10,000 miles.

In all, 445 stallions were paraded for inspection, of which 283 represented the heavy types, 103 the bloods, 46 the ponies, and 13 the trotters.

Of the heavy types inspected, approximately 16 per cent. were rejected, while in the blood class the rejections approximated 6 per cent. In the pony class, approximately 9 per cent. were rejected, whilst the rejections in the trotter class approximated 8 per cent. In all, 57 stallions were rejected, or approximately 13 per cent., which constitutes a record low total of rejections since the Act first came into operation.

During the year 1933/34, when the operations of the Act were resumed, the number of stallions inspected totalled 607, of which 25·7 per cent. were rejected. Each succeeding year has shown a progressive reduction in the number of rejections and exclusions of sires, and it is expected that the improvement apparent in the industry, as a result of the elimination of unsatisfactory sires, will continue.

AGRICULTURE.

In agriculture, notwithstanding an intense heat wave in summer, the year was, generally, the most productive in the history of Queensland.

Sugar.—The yield of raw sugar in Queensland for the 1938 season constituted a further record, exceeding the previous highest (that of 1937) by some 13,000 tons. The comparative crop data for the years 1937 and 1938 are:—

	1937 Tons.	1938 Tons.
Cane harvested	5,132,934	5,342,085
Sugar produced (94 n.t.) ..	763,325	778,136
Acres harvested	249,683	251,064
Tons cane per acre	20·6	21·3
Tons sugar per acre	3·06	3·10
Tons cane per ton sugar ..	6·73	6·87

Of the total sugar yield, approximately 164,560 tons constituted "excess" sugar—that is, sugar produced by mills in excess of peak year allotments. This quantity was disposed of at ruling export rates. The balance—612,250 tons—was marketed in the proportions:—

55·3833 per cent. for Australian requirements.
44·6167 per cent. for sale abroad.

The proportion of the total crop exported — 437,725 tons — was approximately 16,000 tons higher than for the previous year. The average price for No. 1 pool sugar was £16 19s. 1d., as compared with £17 11s. for 1937. The lower price for 1938 was due in part to the larger export proportion from No. 1 pool, and in part to the lower net overseas price, which averaged £8 4s. 3d., as compared with £8 6s. for the previous season.

It will be noted that the quantity of sugar exported for the 1938 crop year was substantially more than the annual quota allotted to Australia under the International Sugar Agreement; for the 1938-39 quota year, this is slightly less than 400,000 tons, and the export of the larger tonnage became possible only because of the "credit" with which the crushing season was commenced.

Preliminary estimates for the 1939 cane crop are now complete, and on the basis of the *total crop available for harvest* in each mill area, the figure obtained is 6,070,000 tons of cane, which might be expected to yield some 870,000 tons of raw sugar. However, the proportion of this which can be manufactured will definitely be limited by the imposition of the new peak quotas, plus a further allotment of 7 per cent., on those peaks, where sugar is available. Under this plan, the total which will be manufactured would not exceed 789,000 tons, and a substantial proportion of the existing crop must, therefore, be stood over for the 1940 harvest. Although this may not constitute a very serious problem in those Southern areas where the growth of two-year-old crops has become standard practice, the position will not be so simple in the Central and Northern areas. The 1939 situation will be aggravated, moreover, by the unusually high degree of "arrowing" exhibited by the crop this year.

The level of cane production has thus attained a value which definitely demands production control, as the potential market is not capable of absorbing the total amount of sugar available annually. For this reason, a Royal Commission was appointed in December, 1938, for the purpose of enquiring into sugar problems generally, and more specifically to deal with the proposed amendment of the 1939 mill peaks, which provided for a total No. 1 pool production of 613,928 tons of 94 n.t. sugar, but which did not directly limit the manufacture of excess sugar. After the hearing of all evidence, the Commissioners presented their reports to the Honourable the Premier on the 27th April, 1939. The Government has since agreed to accept the majority recommendations of the Commission, and the Proclamation acquiring the 1939 crop embodies the new mill peaks as amended. These provide for an annual aggregate of 737,000 tons of 94 n.t. sugar, and virtually limit the total production in any one year to this amount.

There can be no doubt that the adoption of the plan of pegged production will prove decidedly beneficial to the industry generally. It has already been indicated that this plan of control must be supplemented by the granting of a farm quota to each grower, in order that the scheme may be complete. Although this will doubtless cause difficulties, these are not insurmountable; and the solution of the problem of uneconomical production will contribute to the stability of the sugar producer.

In certain districts, large areas of productive land hitherto devoted to cane growing will then be released for other purposes. It thus becomes the duty of the Bureau of Sugar Experiment Stations to assist the cane growers concerned in the development of alternative crops. Doubtless much could be achieved in this regard, where the growers have the mill to exploit their resources to the fullest extent, and already there exist unmistakable signs that the industry is awakening to these possibilities.

Meantime, the Bureau is attempting to demonstrate how cane production costs may be still further reduced—mainly along lines of soil fertility building at reduced expenditure. Increased crop yields per acre have been the chief means of reducing production costs during the past decade, and these methods can be followed to even better advantage in the future.

Wheat.—Seasonal conditions were such that plump grain was a characteristic of every wheat crop, and the harvest was exceptionally heavy. The estimated production of 8,500,000 bushels from 450,000 acres is more than three million bushels in excess of the previous record harvest from 272,316 acres in 1930-31.

Varieties evolved by the departmental wheat breeder—notably Flora, Three Seas, Seafoam, Cedric, Navo. Puora—proved so adaptable to Queensland conditions as to induce a definite increase in our annual grain production. A check of the varieties sown showed that of 30 recorded varieties, no fewer than 15 were bred at Roma. These Roma varieties represented a sown area of 263,823 acres, or approximately 60 per cent. of the aggregate wheat plantings for the season. Considerable progress is thus evident in the evolution of rust-resisting and drought-resisting wheats.

Breeding, selection and observation plots produced satisfactory results at several locations in the Darling Downs and Maranoa districts. Varietal trials in the Callide and Dawson Valleys were similarly successful.

Maize.—Early maize crops were unprofitable for grain in most districts. Good average returns were obtained from the late-sown crop. Pure seed maize improvement work was continued in the Mary Valley, Murgon, Lowood, and Kilcoy districts.

Other Cereals.—Returns from barley, oat, and canary seed crops were influenced by the favourable season on the Darling Downs, but increases in acreage and production were disproportionate as compared with wheat.

Cotton.—A reduction in both the number of growers and acreage has to be reported. This decline, however, is considered to be only temporary. The present prospect is that cotton plantings for the 1939-40 season will set new records, particularly in the Callide and Dawson Valleys, where cotton has been established as a staple crop. Farmers in the Theodore district also are expected to plant cotton extensively on land at present cultivated for wheat.

Exceptionally good returns have been obtained from cotton grown on cultivated land, as distinct from that grown on newly felled scrub areas. The practice of rotating cotton with Rhodes grass at triennial intervals also has been found materially beneficial to both crops.

The yields produced on land which had not been cultivated for more than three seasons following the breaking up of grassland, have been so impressive that in all of the main cotton districts farmers are breaking up grassland for cotton to an increasing extent.

At 30th June, total receivals of seed cotton had amounted to 13,369,503 lb., producing 4,673,000 lb. of cotton lint, or 9,346 bales, each of 500 lb. It is anticipated that the crop will finally yield 12,000 bales of lint.

The usual programme of research was carried out at the Biloela Research Station, with gratifying results. Pure seed stocks of all the commercial varieties are now available in sufficient quantity for the planting of the types of cotton required by Australian spinners.

Sorghum and Other Fodder Crops.—Grain sorghum cultivation is gaining rapidly in importance, particularly on the Darling Downs and in districts where maize often fails as a grain crop.

Crops in the Darling Downs, Maranoa, Upper Burnett, and South Burnett districts were generally satisfactory, both for fodder and grain.

Sorghum crops kept under observation on the Downs revealed an extraordinary stock-carrying capacity. As a consequence, the interest of both cattle and sheep graziers in the possibilities of sorghum is growing remarkably, especially as the dwarf varieties may be mechanically harvested. Grain sorghum can be grown cheaply, and the fact that it can be harvested with the ordinary header with certain minor adjustments, suggests the drought-reserve potentialities of the crop to farmers who have, up to the present, given little thought to its cultivation.

An extensive range of experiments was included in the field work of the year, involving varietal and spacing trials. Pure seed increase and selection plots also were laid down in several districts. Specially selected seed was distributed to growers.

It is many years since such large quantities of summer fodder crops were produced. A substantial proportion of the surplus has been converted into silage for winter feeding and as a dry-time reserve. In this work departmental officers have been particularly active and the response of farmers to their efforts has been greater than during any previous term.

Some increase in the conservation of hay as well as silage has been observed.

Tobacco. The seasonal yield of cured tobacco leaf has been estimated at 1,816,950 lb., from an aggregate area of 3,863 acres. Auction values were well maintained at approximately the previous year's rates. The demand continues keen for all grades of bright leaf.

Potato.—Good yields and high average prices were the experiences of potato growers. The heaviest baggings were obtained from irrigated lands in the Lockyer, Fassifern, and South Burnett. Up to £30 a ton was paid for good potatoes in February, and this economic factor has added to farmers' interest in the crop.

Peanut.—Peanut growers also had a good year; yield and quality being satisfactory throughout. Experiment work was continued in the South Burnett and this included varietal and type trials and seed grade trials. New silos at Kingaroy, built to provide for the crop results of an expanding industry, marked an important stage in the development of co-operative marketing.

Fodder Conservation.—Both winter and summer fodder crops were produced in abundance. In conservation practice, a remarkable advance was made on the Atherton Tableland, where, with the assistance of the Bureau of Rural Development, 44 new pit silos of the concrete collar type were constructed and filled during the autumn months. It is pleasing also to record an increasing practical interest in this form of fodder conservation, notably in the Boonah district.

The number of silos of different types constructed in Queensland during the year exceeded greatly the number built in any previous year.

Pasture Improvement.—Interest in pasture management is extending in every dairying district, and has resulted in a strengthening demand for seed and rootlets from the departmental grass propagation plots.

Administration.—New district offices of the Department have been established at Bundaberg, Monto, Gympie, and Kingaroy.

FRUIT.

Satisfactory conditions prevailed generally throughout the fruitgrowing districts.

Conditions were good in the deciduous fruit districts; markets were buoyant for banana consignments; and prices for most other fruits were payable to the producer.

Stanthorpe production approximated 20,000 tons of fruit and vegetables, as against 24,000 tons in the previous season, which, however, was above the average.

Pineapple production was estimated at 1,325,000 cases as compared with 844,440 cases in the 1936-37 period—an increase of almost half a million cases in two years. Of the 1938-39 production, 761,000 cases were processed, the remainder being sold as fresh fruit on the domestic and interstate markets.

The aggregate area under bananas is 12,250 acres, of which 10,080 acres were under bearing crops and produced 553,000 cases during the year.

Where irrigated, citrus orchards yielded well.

The strawberry crop was exceptionally large, and a well organised distribution scheme became necessary for the absorption of the surplus. For papaws, passion fruit and other fruits, the season also was satisfactory.

Interest in tropical fruits has continued to increase, and citriculture and grapegrowing are expanding industries in the northern and western districts of the State. This expansion, typical of the fruit industry in general, is discussed fully in an incorporated report.

PLANT INDUSTRY RESEARCH.

The research activities of the Department have continued to expand.

The Bureau of Tropical Agriculture has been transferred to the Research Division, which now comprises eight sections—Administrative, Agricultural, Botanical, Entomological, Pathological, Plant Physiological, and the Bureau of Tropical Agriculture.

Agricultural investigation comprised work on various problems associated with field crops, including cotton, tobacco, sorghum, and potato. Other investigations covered the control of plant diseases and pests, the identification and study of plants reputedly poisonous to stock, pasture problems, and soil bacteriology. Very promising results have been achieved in many fields and much important data have been recorded.

A detailed account of the investigational work of the Division is given by the Director of Plant Industry (Research) in his general review, in which appreciable progress made in the projects undertaken is recorded.

DAIRYING.

By the end of the year dairy production had attained the highest level ever recorded in Queensland. The equipment of many factories was quite inadequate to cope with the remarkable increase and substantial additions to operating plant became necessary, The butter output was 154,377,535 lb. (1937-38 production, 114,691,039 lb.), and of this aggregate, approximately 76 per cent. was exported, chiefly to the United Kingdom; 21 per cent. was supplied to the domestic market; and 3 per cent. was sold interstate.

Cheese production totalled 15,749,103 lb., an increase of 2,778,498 lb. on the output of the previous year.

The drive for quality improvement in cheese has led to much activity in the rebuilding or remodelling of factory premises.

The approximate value of the industry to Queensland for the year was £10½ millions.

The customary services of the Department to the industry were maintained and there is a growing appreciation of their extent and value.

Dairy Fodders and Pastures.—To provide supplements to the ordinary pastures, fodder conservation in stack and silo is becoming more widely practised in the dairying districts. Instructional and advisory effort has been directed towards making this form of provision for dry seasons a routine practice on every farm. The attainment of an equilibrium between crop production and fodder provision is another objective.

Fodder conservation to provide for the maintenance of stock in good condition throughout the year, and not only in times of scarcity, has been demonstrated as a sound principle in farm economy.

In addition to building up fodder reserves, farmers are giving more attention to the nutritional aspects of animal husbandry. The fact that proper nutrition is a factor of first importance in any stock improvement scheme is becoming more broadly appreciated; likewise, the fact that the level of nutrition determines the level and degree of that improvement.

Fodder provision and pasture improvement are, therefore, regarded as cardinal points in departmental policy.

PIG RAISING.

Accelerated progress was the general experience in the pig industry during the year. Prices were maintained on a more satisfactory and stable basis.

Better farm practice has resulted in healthier stock; and there has been a steady improvement in the quality of pork and bacon pigs marketed either as feeders or breeders. The export trade in pig products has expanded considerably.

In co-operation with the Queensland Pig Industry Committee, a new service of pig carcase appraisal has been introduced. Under this scheme facilities are provided for a farmer to have any particular pig he nominates appraised after slaughter, and for him to receive a detailed report on its carcase quality.

THE POULTRY INDUSTRY.

Expansion also marked the year in the poultry industry, and increased production has been the experience throughout the State. The higher values last year and the easing of poultry food charges have acted as a stimulant to the industry.

The Egg Board handled 4,529,846 dozen eggs during 1938, and of this number, 1,234,380 dozen were exported overseas.

Registered hatcheries number 51. Eight egg-laying competitions were conducted under departmental supervision.

WILD LIFE PRESERVATION.

The past year has been more or less one of routine patrols in respect of the operations of *"The Fauna Protection Act of* 1937" because of there being no open season for the opossum. A large number of opossum skins from the last open season still remain unsold on the London market, due, to a large extent, to the international situation.

In the course of the year 17 sanctuaries, with a total area of 305,247 acres, were declared, and they include scenic reserves along the Queensland—New South Wales border, joining up Springbrook, Numinbah and Lamington National Park. Mount Glorious, another beautiful rain scrub and forest area, adjoining the Cedar Creek sanctuary, also was declared a sanctuary during the year. The Stanley River catchment area and Mount Brisbane station property also have been proclaimed sanctuaries, and they should be a notable tourist attraction when the Somerset Dam is completed.

Honorary protectors, numbering 93, were appointed during the year to assist the police in the protection of sanctuaries. The total number of honorary protectors in the State now stands at 1,350.

Regular inspections of aviaries have been made and hygienic conditions for the maintenance of birds therein have been insisted upon. A decided improvement has been observed in the type of aviary now built.

Royalty has been collected throughout the year in respect of all protected or partially protected birds sold, exchanged or given away; and these transactions have been limited mainly to zoos or museums.

Protection will be given to the native bear (Koala) in this State for all time, and only in exceptional circumstances have permits been granted during the year for the maintenance of this animal in captivity.

Prosecutions have been instituted in cases of breaches of the *Fauna Protection Act,* and the firearms and traps of offenders confiscated.

Active attention has been given to the protection of native flora throughout the year, and regular week-end patrols have been made. Protection of ferns and plants is further ensured because of the necessity for obtaining a permit for the removal of native plants from either the landowner, the Main Roads Commission, or this Department.

CHEMICAL SERVICES.

Samples received by the Agricultural Chemist totalled 9,301—as compared with 8,417 in 1937-38, and 7,006 in 1936-37. Other chemical services included the examination of viscera and toxological specimens and samples submitted by the Customs; soil analyses; investigations into the digestibility of stock foods and of the stock food value of numerous grasses and shrubs; and poison plants investigation. Tabulated results of the work of the year are embodied in the report of the Agricultural chemist.

Pure Seeds and Related Legislation.—Among the comprehensive laws for the protection of the interests of primary producers in Queensland in respect of their purchase of farm seeds, pest destroyers, fertilizers, stock foods, and veterinary medicines are *The Pure Seeds Act* and related legislation. The administration of these important measures was marked by customary vigilance throughout the term. Tabulated details are attached.

BEE-KEEPING.

There was no serious disease in apiaries during the year. Seasonal conditions were favourable and an increased honey flow was the result. The economical position of the bee-keeping industry is discussed in the report of the Acting Director of Marketing.

PUBLICITY BRANCH.

A well organised informational service has been maintained. *The Queensland Agricultural Journal,* which completed its forty-second year on 30th June, continues to be the principal medium for the publication of the results of the research work of the Department, as well as of the practical methods of its application. In the *Journal* also is published a wide diversity of useful information to primary producers. Its distribution for the twelve months aggregated 113,000 copies. *The Weekly News Bulletin*, an extension of this service, is issued regularly to every newspaper in the State; this is in addition to the customary press-news service supplied by the Department.

Library.—The reorganisation of the central library has been completed and its sphere of usefulness extended. The Department has now an excellent collection of literature of importance to every branch of primary industry.

MARKETING.

An account of the operations of the several commodity boards constituted under the provisions of legislation relating to the organisation of primary producers and the marketing of their products is given in the annexed report of the Acting Director of Marketing.

IN MEMORIAM.

The death of Mr. Robert Wilson, Acting Under Secretary and Director of Marketing, which occurred on 19th April, is recorded with very deep regret. The late Mr. Wilson was actually the executive head of the Department, but as he had almost attained the retiring age when his predecessor, the late Mr. Ernest Graham, died last year, his appointment to that office was not made.

In January, 1935, Mr. Wilson was appointed Assistant Under Secretary, assuming the administrative responsibility, under Ministerial direction and by delegation from the Under Secretary, of a great department with activities and influence extending throughout the State. He was a member of the Agricultural Bank Board, Deputy Chairman of the Rural Assistance Board, and a member of the Dairy Products Stabilisation Board. He also was Government representative on the Butter and Cheese Boards and on other boards dealing with the marketing of primary products. In all his activities he lived up to the highest ideals of public service, and by his death Queensland has lost a great citizen and the Department a devoted and capable administrator.

ANNEXURES.

Complete accounts of the work of the Department during the year just ended are contained in the reports of the Director of Plant Industry (Research); the Director of Agriculture; the Director of Cotton Culture; the Director of Fruit Culture; the Chief Inspector of Stock; the Veterinary Adviser; the Directors of the Animal Health Stations at Yeerongpilly and at Oonoonba; the Director of Dairying; the Agricultural Chemist; the Officer in Charge of the Seeds, Fertilizers, Pest Destroyers, Stock Foods and Veterinary Medicines Investigation Branch; the Editor of Publications; and the Acting Director of Marketing—all of which are incorporated herein.

I am, Sir,

Yours faithfully,

Richd P M Short

Acting Under Secretary.

REPORT OF THE DIRECTOR OF PLANT INDUSTRY (RESEARCH).

The various activities of the Division of Plant Industry (Research) are reviewed in this report, covering the year under review, and which constitutes the second annual report of the Director of Plant Industry (Research). The Division was inaugurated early in the 1937-38 departmental year, but the annual report for that year did not constitute a review of a full year's activities of the new organisation.

The Division, as originally constituted, comprised Administrative, Agricultural, Botanical, Horticultural, Entomological, Plant Pathological, and Plant Physiology Sections. In the course of the year under review, however, the Bureau of Tropical Agriculture at South Johnstone was transferred to the Division of Plant Industry (Research), thus constituting an eighth section therein.

There has been an appreciable increase in the numerical strength of the Division, partly as a result of the transfer referred to and partly as a result of additional appointments to various sections. At 30th June, 1939, the staff consisted of forty-four officers engaged on investigational and field experimental work, one illustrator, one officer engaged on apiary work, and six clerical assistants, in addition to the labouring staff at the Bureau of Tropical Agriculture.

The year has witnessed further appreciable progress in implementing the programme of activities mapped out for the Division, these activities, as in the previous year, being carried out in close association with other appropriate branches of the Department, co-operation being naturally of most frequent occurrence with the Agriculture, Fruit, and Agricultural Chemistry Branches.

The Director of Plant Industry (Research) again deals with the Administrative Section of the Division, and also discusses some of the main features of the programmes allotted to the several sections. Each senior research officer in charge of a section has submitted a report dealing with the work of his staff, and these reports are attached hereto. These sectional reports do not contain full details of the work carried out during the 1938-39 departmental year, the procedure in this Division being to supply the details when the various projects are written up in the form of progress of final reports for publication in the *Queensland Agricultural Journal*. The sectional reports, however, supply a review of the activities of the Division which is adequate for the purposes of an annual report, especially when taken in conjunction with the extensive publication programme that is a feature of the activities of the Division.

The active control of the Bureau of Tropical Agriculture at South Johnstone has been assumed by Mr. J. L. Schofield, who commenced duty in November last. Mr. Schofield had considerable experience of the problems of tropical agriculture during a period of service in the Malay States prior to his present appointment.

Following an arrangement with the Council for Scientific and Industrial Research, it was decided that Mr. C. T. White, Government Botanist, should proceed overseas for an extended period as liaison officer at the Royal Botanic Gardens, Kew.

STAFF ACCOMMODATION AND EQUIPMENT.

The rapid growth of the staff at Nambour, consequent on the increased attention that is now being given to horticultural investigational work, necessitated the provision of additional accommodation, and this was obtained late in the departmental year, at comparatively little cost. The Nambour staff is therefore now adequately housed. Additional facilities were also provided at the Biloela Research Station, where an insectary was provided.

Nursery activities at the Bureau of Tropical Agriculture have been increasing appreciably, and it was considered desirable to provide irrigation facilities at South Johnstone so that the nursery stock would not be subjected to unduly severe checks during periods of low rainfall or absence thereof. An irrigation plant was accordingly acquired and despatched to South Johnstone at the end of the financial year. A lath house for plant propagation work was also erected at this centre, and a specially designed dryer was constructed in Brisbane and installed at South Johnstone to deal with the large number of grass samples which are handled in connection with the coastal pasture investigations of the Bureau.

Certain alterations were also made in the departmental building at Atherton, being designed to make more effective use of the floor space available in the building, and to adapt it for the requirements of a soil bacteriology laboratory rather than for an entomological laboratory, for which it was originally used.

AGRICULTURAL INVESTIGATIONS.

A perusal of the report of the Agricultural Section, submitted by the Director of Cotton Culture and Senior Research Officer, shows a considerable expansion in the amount of work handled by its staff.

Cotton plant-breeding work is discussed for the first time in the report of this section. It will also be observed that sorghum investigations are quite extensively discussed.

Certain of the activities of the Agricultural Section have again been carried out in the closest co-operation with officers acting under the supervision of the Director of Agriculture, this being particularly so in the case of the work on tobacco, cotton, sorghums, and potato. The report of the Director and Senior Research Officer will, therefore, refer in some considerable detail to the work done by this section in co-operation with the Agriculture Branch.

The report of the section indicates very definite progress in quite a number of directions, and it is particularly pleasing to be able to refer to the fact that 60 per cent. of the area sown in the last wheat crop was sown to varieties evolved by the plant-breeding staff of this Department. This is an excellent demonstration of the value of agricultural investigational work, for it is only fair to assume that these varieties were extensively grown simply because they give better returns than are likely to be available from the varieties which they have displaced.

In the tobacco investigations the problem of yellow patch was very satisfactorily clarified, and there is now no reason why tobacco-growers in North Queensland should sustain losses through yellow patch in their seedbeds.

The plant-breeding activities in cotton, which have always been conducted on a very considerable scale, were still further intensified during the year, and it is pleasing to note that appreciable progress also is being achieved.

It will be noted that the pasture investigational programme is well under way, and is being pursued as actively as circumstances permit.

Botanical Investigations.

The Botanical Section again devoted a very considerable proportion of its time to the identification of specimens for departmental officers and for the general public, the staff also giving the necessary attention to the very extensive and valuable herbarium and museum.

Once again plants that are known to be, or are suspected of being, poisonous to stock involved the staff of the section in a considerable amount of work, and the various school project clubs were again given valuable assistance.

There has been no deviation from the previously accepted lines of work in this section, and its activities have proceeded normally and satisfactorily, and are reviewed in the attached report prepared by Mr. W. D. Francis, Botanist, who assumed control of the Section during the absence of Mr. C. T. White overseas.

Bureau of Tropical Agriculture Investigations.

The work at the Bureau has proceeded somewhat along the lines laid down in the initial stages of its development, and a very considerable amount of work on pastures, plant-breeding, and general horticulture has been undertaken by the staff. In addition to the work performed by these officers, certain activities, associated with the Bureau, have been carried out by officers not directly connected with its staff. The Instructor in Fruit Culture at Cairns, for example, has been responsible for the supervision of the comprehensive mango experimental programme which has been initiated at South Johnstone. Furthermore, the senior research officer in charge of the Horticultural Section of the Division, has been associated with the design and the conduct of the horticultural experiments at the Bureau. Here again is an instance of the steady development of the policy of the close association of several officers, connected with several branches in the Department, in the solution of a set of problems to which each of them brings something of value from his personal training and experience.

The Bureau officers, while interested very largely in coastal problems, are also associated with the work of other departmental officers located on the Atherton Tableland, and that association will probably become still closer as a result of the recent institution of the Tableland Experiments Committee.

Entomological Investigations.

There was some considerable reallocation of duties in the Entomological Section during the year under review.

It has been obvious for some time that an accession to the numerical strength of this section in Brisbane was rendered necessary, because of a decided increase in general entomological work and a concentration on the investigation of the important group of problems constituted by insects attacking market garden crops.

A research officer is now in charge of the entomological work at Toowoomba, which will serve as a centre for such work on the Downs and in the Maranoa, and he is now engaged on a survey of the problems occurring in that great stretch of territory.

General entomological investigational work has been carried on in North Queensland for a considerable number of years, and research officers are now engaged almost exclusively on a programme of general field investigational work, embracing such problems as pasture renovation, the production of crops for silage making, rotations, and other projects carried out under the general supervision of the White Grub Investigations Committee. Very satisfactory progress has been made with that programme of work.

Marked progress has been made in certain investigations during the year under review, and the position with respect to measures for the control of codling moth in the Stanthorpe district now appears to be reasonably satisfactory.

A new development in connection with banana weevil borer control was the introduction of a predatory enemy of that pest from the Federated Malay States, the actual importation being made by the Council for Scientific and Industrial Research.

The position with respect to bean fly control constitutes another example of progress in that a nicotine sulphate-white oil spray gives definitely satisfactory results, and another important pest has therefore been removed from the list of those which were previously regarded as being wellnigh uncontrollable.

The lantana leaf bug now appears to be firmly established at one centre on the Atherton Tableland, and the progress of this insect will be watched with interest during the next year or two.

The work on cotton and forestry pests continued more or less along the same lines as in the previous departmental year. The Queensland Cotton Board, which has co-operated in complete harmony with the Research Section of the Department, once more subsidised the appointment of the officer who is exclusively engaged on cotton pest investigations at the Biloela Research Station, and the Forestry Sub-Department was again responsible for the whole of the salary and the travelling expenses of the assistant research officer engaged on the investigation of pests of trees and timber.

Further information regarding the entomological work of the year will be found in the report of the activities of the Entomological Section.

GENERAL HORTICULTURAL INVESTIGATIONS.

The work of the Horticultural Section has proceeded along the lines laid down in the last two years and appreciable progress has been made in quite a number of the investigations. This is exemplified by the report on little leaf which was recently published in the *Queensland Agricultural Journal.*

Banana experimental work, which was just in the preliminary stages in so far as the Division of Plant Industry (Research) was concerned when last year's report was submitted, is now well under way and is being as actively pursued as circumstances permit, in association with the Banana Industry Protection Board.

It will be noted that work on the avocado and the mango is being actively engaged in, the former in South Queensland and the latter in North Queensland. The actual field work on both these fruits is being handled by officers of the Fruit Branch and is a further illustration of the close association existing between the Division and the Fruit Branch in the attack on horticultural problems in Queensland.

A perusal of the report submitted by the senior research officer in charge of the Horticultural Section, discloses no mention of work on pineapples, although an officer of the Horticultural Section is actually engaged, as a full-time officer, on pineapple plant selection studies. Most of the work on pineapples is conducted by officers in the Plant Physiology Section and the senior research officer of that section has accordingly reviewed the whole of the pineapple activities of the Division.

As in previous years, a subsidy was received from the Federal Government towards meeting the cost of the apple and pear investigational programme at present being conducted in the Stanthorpe district.

PLANT PATHOLOGICAL INVESTIGATIONS.

A perusal of the report of the Plant Pathological Section indicates that considerable progress has been made in the investigation of a number of the more important diseases affecting economic plants in this State. It will be noted that the present programme of investigation of cereal diseases is approaching completion, and citrus disease investigations are similarly reaching a stage at which they will probably require considerably less attention in future than has been devoted to them in the past.

It is noteworthy that in several cases the results of well-designed and well-conducted experiments were inconclusive, as a result of conditions being unfavourable to the development of the diseases under investigation. In these cases it was impossible to obtain any reasonably clear contrast between the results of the treatments experimented with and the untreated control plots. This is a risk that must always be taken in carrying out plant pathological field experimental work, and there is no way of avoiding disappointments such as those just experienced.

During the year under review a subsidy was obtained from the Other Fruits Sectional Group Committee to ensure a greater degree of attention to the investigation of papaw disease, and the programme that has been made practicable by that subsidy is now in its preliminary stages. The same committee continued to subsidise the tomato disease investigations, and in this case a continuation of a subsidy by the Rural Credits Branch of the Commonwealth Bank was approved.

As in past years, the Forestry Sub-Department of the Department of Public Lands has been responsible for the salary and for the whole of the expenses of the assistant research officer who is engaged on the investigation of forestry pathological problems.

PLANT PHYSIOLOGY INVESTIGATIONS.

The report of the Plant Physiology Section shows that the work therein has proceeded more or less along the lines laid down in previous years. The thirty-two demonstration plots continue to serve a very useful purpose by strikingly showing the advantages to be derived by the application of modern methods of pineapple production which have been found to be suitable under Queensland conditions.

An important new project was the initiation of comprehensive pineapple fertility trials in the Glasshouse Mountains district, and it is gratifying to be able to record that this ambitious set of trials got off to a very good start. It is also pleasing to note that the position with respect to the obscure malady of young pineapple plants known as crook-neck has now been clarified. The trouble has been demonstrated to be due to a zinc deficiency and appropriate corrective measures can now be taken for dealing with this problem.

A renewal of the water blister investigation was decided on during the year, for the very good reasons outlined in the attached report by the senior research officer in charge of the Plant Physiology Section.

The scope of work in the Plant Physiology Section has been appreciably expanded and investigations on papaw soil problems are now included in its programme of work. It was also practicable, during the 1938-39 departmental year, to give some attention to soil problems in the Tara district of the Darling Downs.

Once again appreciative reference must be made to the fact that the work of this section has been conducted in close and harmonious co-operation with appropriate officers of the Fruit Branch. Appreciation is also expressed of the valuable subsidies which have been received from the Pineapple Sectional Group Committee, the pineapple canners of Queensland, and the Fruit Industry Sugar Concessions Committee.

SOIL BACTERIOLOGIST'S INVESTIGATIONS.

During the year, a soil bacteriologist continued his work on the Atherton Tableland and in the Mareeba and Dimbulah tobacco-growing areas. On the Tableland, he worked largely in association with an assistant research officer, an instructor in agriculture, and a field assistant, and whose work constituted an integral part of the field investigational programme carried out under the auspices of the White Grub Investigations Committee. That programme of work has made very satisfactory progress and the sphere of the committee has now been enlarged. The soil bacteriologist was associated with the work on maize fertilizer experiments, the testing of maize and legume mixtures for silage making and observations on the establishment of mixed pastures of grasses and legumes. He also devoted some time to the investigation of possible soil deficiencies in the Malanda and Peeramon districts. Yellow patch in tobacco seedbeds at Mareeba and Dimbulah occupied some of his time in association with officers of the Agriculture Branch.

TABLELAND EXPERIMENTS COMMITTEE.

Some years ago, the White Grub Investigations Committee was established to act in an advisory capacity in connection with the field experimental programme designed to alleviate, if not solve, the serious deterioration of carrying capacity in certain dairying sections of the Atherton Tableland, which was associated with heavy infestation by white grubs. This committee consisted of three departmental representatives and three representatives of the primary producers. It functioned in a highly satisfactory manner and, during the 1938-39 departmental year, it was decided to extend the sphere of its activities to cover the whole of the general field experimental programme carried out by departmental officers on the Atherton Tableland. The personnel now consists of four departmental representatives and four representatives of primary producers and, in view of its extended sphere of activities, it has been redesignated the Tableland Experiments Committee.

PUBLICATIONS.

Regular contributions, prepared by officers of the Division, appeared in the *Queensland Agricultural Journal*, and included the following items:—

(1) Further Experiments on Mildew Prevention in Calico, with Special Reference to Tobacco Seedbed Covers, by T. McKnight.
(2) Queensland Weeds—Shrubby or Upright Mist Flower, by C. T. White.
(3) Brown Spot of the Emperor of Canton Mandarin and its Control, by L. F. Mandelson and F. W. Blackford.
(4) The Control of Banana Rust Thrips, by N. E. H. Caldwell.
(5) Codling Moth Control Experiments, 1937-38, by K. M. Ward.
(6) Cotton Jassids or Leafhoppers, by W. J. S. Sloan.
(7) Notes on the Genus Flindersia with Keys for the Determination of the Rain-forest Species, by W. D. Francis.
(8) The Acidification of Alkaline Nursery Soils for the Production of Exotic Pines, by H. E. Young.
(9) Pests of the Grape Vine, by J. Harold Smith.
(10) Grape Vine Diseases in Queensland, by R. B. Morwood.
(11) Some Notes on the Springsure and Clermont Districts, July, 1938, by S. L. Everist.
(12) Virus Diseases of the Strawberry, by F. W. Blackford.
(13) Field Notes on some Rain Forests and Rain Forest Trees of Tropical Queensland, by W. D. Francis.
(14) Little-leaf—A Functional Disorder of Apple Trees at Stanthorpe, by K. M. Ward.
(15) A Noxious Weed—The Needle Burr, by W. D. Francis.
(16) Wheatgrowing in Queensland, by R. E. Soutter.

A number of short articles, not included in the above list, also appeared in the *Weekly News Bulletin*, and were subsequently reprinted in the *Queensland Agricultural Journal*.

The preparation of Volume I. of *The Queensland Agricultural and Pastoral Handbook*, dealing with farm crops and pastures, is now well on the way to completion.

ROBERT VEITCH,
Director of Plant Industry (Research).

(1) REPORT OF THE AGRICULTURAL SECTION.

The operations conducted during the 1938-39 departmental year as part of the programme of investigations designed by the Agricultural Section of the Division of Plant Industry (Research) are reviewed in this report. Much of the work has been done by members of the staff of the Director of Agriculture and Senior Research Officer, and details of some of the experiments will be included by the respective officers in their reports to the Director of Agriculture.

PLANT BREEDING.

Wheat.—A comprehensive programme of wheat-breeding investigations was carried out by Mr. R. E. Soutter, Senior Research Officer.

The wheat-breeding investigations now deal largely with the value of various crosses made between rust resistant wheats and wheats that are satisfactory in most respects, except that they are not resistant to rust. Encouraging results were obtained by Mr. Soutter in 1937-38 in some of the hybrids studied, and, during the past season, definite progress was made in isolating strains resistant to conditions of severe rust infection. Much work remains to be done in such strains before a variety suitable for commercial distribution can be obtained, but it would appear that the present breeding programme may ultimately produce a satisfactory rust resistant variety.

As the wheat crop is grown during the driest portions of the year, and in districts experiencing less than a 30-inch rainfall, it is essential that a variety of wheat should have the ability to withstand prolonged dry conditions if it is to be of value for most of the Queensland wheat-growing districts. Particular attention has, therefore, been given to this very important point in the wheat-breeding programme conducted at the Roma State Farm during past years and gratifying success has been obtained. In the enlarged programme of investigations conducted this year, provision was made for continuing this important work at Roma.

Considerable concern has been expressed in some seasons by both millers and farmers regarding the occurrence of mottling, or yellow berry, in some varieties. These terms are applied to white and red wheat respectively, when the grain has a mottled appearance. Flour milled from mottled grain is not as suitable for making bread of good quality as flour obtained from a translucent sample of the same variety. There is now evidence that the occurrence of mottled grain is caused by seasonal conditions and/or environment, and may generally be attributed to a deficiency of nitrates. Some varieties appear to be more susceptible to mottling or yellow berry than others, however, and during this season work has been started with a view to testing the leading varieties grown in the State as to their tendency to this condition.

The general average quality of the wheat produced in this State is of a high order, and during the past season the surplus supplies of grain forwarded to Great Britain have received favourable commendation. With the expansion of wheat production in this State beyond the amount required for local consumption, it is desirable, however, that grain of still higher quality be produced. The gluten quality of a number of the most promising crossbreds and leading varieties has therefore been studied, with the assistance of the staff of the Agricultural Chemist, in order to provide information on this important factor.

The cutting of the glumes of the ears of wheat or other winter cereals, which is sometimes done in order to facilitate the crossing operations, often causes such an adverse reaction as to result in the production of very pinched grain. Where such grain is sown, the resultant plants are generally of poor constitution and frequently fail to develop. In an endeavour to ascertain whether such pinching of the grain is the direct effect of the mutilation of the flowers, or is also partly due to the reproductive organs being exposed to the extra light, an investigation was conducted in which cut flowers were covered with various coloured bags. The results obtained appeared to indicate that mutilation is the controlling factor. Whether atmospheric conditions exercised any influence or not could not be ascertained.

Several investigators are of opinion that the yielding capacity of a variety of wheat, or any other cultivated crop, the flowers of which are usually self-fertilized, becomes impaired with the successive growth of the variety over a series of years. It has been suggested that the yield capacity of such a variety can be restored by artificially pollinating flowers with mixed pollen collected from a large number of flowers of the same variety. A preliminary investigation of this claim was started in 1937, and it yielded sufficient information this season to warrant further tests on some of the leading Queensland varieties during the coming season.

The continued increase in the popularity of the varieties Flora, Puora, and Seafoam has necessitated the inauguration of a scheme of pure seed production that will provide ample supplies of pedigreed seed thereof. Accordingly a plan was evolved last season, in collaboration with the Wheat Board, which will ensure the production of sufficient seed of a satisfactory standard of each variety.

In view of the increased interest in wheat-growing in the Callide Valley and Theodore districts in recent seasons, it was considered advisable to enlarge the programme of wheat investigations that has been conducted for several years at the Biloela Research Station, in those districts. Accordingly, the degree of rust resistance displayed by a considerable number of the newer crossbreds evolved by Mr. Soutter was carefully studied by the manager of the station. The climatic conditions experienced were very favourable for the development of rust, and confirmation was obtained of the excellent rust resistance character of some of the strains that led in the tests conducted on the Darling Downs.

A comprehensive series of trials of the varieties that have shown promise over a series of years at the Biloela Research Station was carried out by a senior instructor in agriculture. The objective in these trials was to test the merits of these wheats on the major soil types in the districts mentioned. Under the abnormal rainfall experienced, very good yields were obtained in all varieties, but the incidence of rust severely affected some of them. Considering the results as a whole, the variety Three Seas appeared to be the most suitable for the conditions experienced.

Barley.—The growers of barley in this State have experienced serious losses in some seasons through the effects of severe visitations of rust on both the yield and quality of the grain produced. Unfortunately no strains or cross-breds that have been evolved in the breeding programme have shown much promise of improving the situation. The work of barley improvement has hitherto been seriously handicapped through the lack of any variety that is resistant to rust under Queensland conditions. In the 1937-38 season, however, Pentland, a variety received through the courtesy of the New South Wales Department of Agriculture, showed conclusively that it was less susceptible to rust injury than any of the other strains or varieties grown in the tests. Crosses were accordingly made between Pentland and leading varieties of barley to obtain materials which may segregate superior rust resistant strains.

Field Pea.—Investigations have been conducted for several years into the possibility of developing a field pea for use in the drier districts, that would produce a pea which, when dried, would be suitable for culinary purposes. Crosses were originally made between Stratagem, a well-known culinary pea, and Paragon, a field type. The surviving selection of this cross was crossed in 1935 with the Telephone pea, a table variety. Groups of selections from this mating are being tested at the breeding centres located at Moggill, Kincora, and Bowen.

Cowpea.—The desirability of including a legume in the cropping system of the drier districts of the State led to the development of a breeding programme of improvement of the cowpea. Unfortunately, in the sandy soils of the drier areas, nematodes seriously attack most varieties of cowpea that might otherwise be grown satisfactorily. Accordingly, resistance to nematodes and abnormally dry conditions have been the major objectives aimed at in the breeding programme in the immediate past. The use of a cowpea as a green manure crop in the sugar-cane areas, however, where wilt-resistant varieties are required, has necessitated the formulation of an additional programme in which wilt resistance and also immunity from the attacks of the bean fly will be the major factors studied. Work was started in the 1937-38 season along these lines, the intention being to sow the first generation of seed at Roma and the second generation in the wilt-infected areas.

Oats.—Although a large acreage of several varieties of oats is sown each season for grazing purposes, most of the oaten chaff used in Queensland is imported from other States of the Commonwealth. The chief inhibiting factor for the production of oaten chaff of good quality in the districts where oats are grown for grazing purposes appears to be the incidence of rust. Accordingly, investigations were started to obtain data from a comprehensive range of varieties of oats, grown commercially in Australia, prior to initiating a cross-breeding programme in the coming season. Crosses will be made between the most suitable of these commercial varieties and rust-resistant varieties obtained from Canada and the United States of America.

Cotton.—Although rather variable climatic conditions were experienced in some of the cotton-growing districts, the general cotton improvement programme was completed fairly successfully. Selection work was carried out in eight varieties of cotton grown in sixteen breeding areas, with the co-operation of various officers of the Agriculture Branch.

An inspector in cotton culture, assisted in the work in the south, connected with the breeding areas of the Farm Relief, Oklahoma Triumph, and New Mexico Acala varieties and, in addition, supervised the growing of the seed multiplication plots of twenty-six new introductions. Some very promising selections were obtained in the three older varieties, especially in the New Mexico Acala, which gives promise of replacing the Indio Acala variety on account of the former having a better strength of fibre.

Work in the breeding areas of the Half and Half, Miller, and New Boykin varieties in the South Burnett district was conducted in spite of the adverse climatic conditions that occurred, and a considerable increase of seed was obtained in the most promising progenies of these varieties, which will enable enlarged areas to be planted in the coming season.

Excellent progress has been been made in the breeding areas of Lone Star and Oklahoma Triumph in the Central Burnett in past seasons in developing suitable strains of the Lone Star variety for the clay and clay loam soils of that district. One of the strains released this season for the multiplication of seed stocks produced approximately 1,600 lb. of seed cotton per acre under rainfall conditions. As the lint per centage of this strain is around 1½ per cent. absolute better than the parent stock it would appear that further definite improvement of this already suitable variety has been obtained. Very satisfactory progress in improving the Oklahoma Triumph variety for the fertile loams of that district has been made this season, and some of the leading strains will be increased preparatory to testing and releasing the best of them for general commercial growth.

Selection operations in the Miller and Half and Half varieties in the Upper Burnett District also were proceeded with. The lot 42 strain of the Miller variety is one of the promising selections made. It originated from a very hairy plant selected several seasons ago as possibly having some jassid resistance. Promising yields have been obtained in the subsequent increase plots of the strain, but considerable difficulty has been encountered hitherto in developing a satisfactory degree of uniformity of plant type. The progress made in this direction in the breeding area this season, however, has been so satisfactory that a comprehensive testing of the strains for jassid resistance will be carried out in the coming season.

Selection work in the Miller, Indio Acala, and New Boykin varieties was done in the Central District, and a superior strain of Miller, which is the most extensively-grown variety in this district, has been isolated, and will be increased as rapidly as possible to replace the bulk parent stocks. A large number of promising new selections were also obtained for testing in the breeding area in the coming season. The programme of improving the strength of the long-stapled Indio Acala variety that has been conducted for several seasons is bearing fruit, and several very promising strains of this variety were grown this season. These will be increased for further testing, and the best will be multiplied for general planting. Satisfactory progress also was made in developing improved strains of New Boykin, which is a variety that appears to provide good prospects of supplying a short staple cotton well suited for the alluvial soils of the Callide Valley.

The results obtained this season in the general cotton improvement programme have given every indication that superior strains will shortly be available of the varieties which are now grown to produce the types of cotton required by the Australian cotton spinning industry. Unfortunately, none of these varieties is entirely resistant to the jassid leaf-sucking insect which, under certain conditions, may seriously damage the cotton crops.

In the last two seasons, rather extensive losses resulted through jassid attacks, and it was accordingly decided to initiate a programme aiming at obtaining a jassid resistant variety. Unfortunately, the most widely-grown jassid resistant varieties of other countries produce cotton of a type not required in this country, and, in addition, have bolls that are too small for economical picking under Australian conditions. An assistant research officer, was, therefore, appointed to the Biloela Research Station, to carry out a programme of work consisting of isolating promising jassid-resistant plants in the varieties now grown here, and of investigating the possibilities of developing immune varieties through hybridizing the best of the local varieties with introduced jassid-resistant ones. Some very promising selections were located in some of the local varieties which were self-pollinated. The selfed seed will be planted in the coming season for further purification and testing in areas that generally experience jassid attacks. A comprehensive programme of hybridization studies was also conducted to ascertain the mode of inheritance of jassid resistance. Such work is of the long range research type, and, normally, will require several year's operations before any definite progress can be expected.

PEANUT.

The programme of improvement of the Virginia Bunch variety of peanut was continued during the resent season. A yield trial of the most promising strains in the test carried out in the previous season was conducted. Strain number 77 led outstandingly in total yield of unshelled nuts per acre, but, unfortunately, produced significantly more smaller nuts than the next best strain.

Many peanut growers have experienced difficulty in obtaining a suitable stand through planting large A grade shelled kernels. The practice has, therefore, arisen of planting seed of C grade nuts, which contain a large percentage of small seed with a shrivelled skin, these appearing to produce satisfactory stands of plants. It is possible, however, that by repeatedly sowing the smaller shrivelled seed over a series of years, the general quality of the kernels produced will be adversely affected. Accordingly, an experiment to test the yield and quality of nuts produced from sowings of different types of kernels was started this season. The results obtained, indicated that medium-sized, normal kernels and large shrivelled kernels produced the best germination of plants. The plants germinating from A grade seed produced markedly fewer runners and also tended to experience less disease incidence than any other strain tested. There were no significant differences between the total yield of nuts or the percentage of any grade of nuts produced. Likewise, there was no significant difference between the weights of stover or plant residue after the nuts were removed. Unfortunately, the nuts had not been shelled at the time of writing, so no comment can be made on the size of kernels produced by each grade of seed.

POTATO.

The growing of English potatoes is engaged in extensively in different districts of the south-eastern section of the State. Considerable diversity of opinion exists, however, regarding the most suitable cultural methods to adopt and the best varieties to grow in the different districts. In addition, the increasing use of irrigation plants to supplement the rainfall adds further complicating factors. Although very satisfactory yields are frequently obtained in most of the main potato-growing districts, a marked variation in production occurs that warrants investigations being conducted to ascertain the causes and possible remedies thereof. Preliminary to designing a programme of investigations into cultural practices, it was deemed advisable to conduct trials of the most extensively grown varieties to ascertain the best variety for each of the main subcoastal and coastal potato-growing districts. As two crops of potatoes are grown in a season in this section of the State, trials were planted in July and again in February in the Lowood and Mary Valley districts.

The results of the season's work in the two mentioned districts are somewhat indefinite. Apparently Manhattan is a reliable variety to use for either the July or February plantings in the subcoastal Lowood district. However, in two varietal trials conducted in this area in the later crop during the 1935-36 season, which experienced dry weather and heavy tuber waste, there was little difference between the Manhattan and Scottish Triumph varieties as regards yields of commercial potatoes, although there was a definite tendency for Scottish Triumph to produce a higher total yield. The Mary Valley results were inconclusive.

A trial of various fertilizers was also conducted to ascertain whether the application of a fertilizer would improve yields on the alluvial soils in the Lowood district. No statistically significant differences in yields were obtained, but there was a definite tendency of the unfertilized areas to produce the highest yield of potatoes. There also was an indication that the addition of 1 cwt. of sulphate of ammonia to either 3 cwt. of superphosphate, or 3 cwt. of superphosphate and 1 cwt. of muriate of potash, tended to depress yields somewhat.

TOBACCO.

As was pointed out in the 1937-38 report, there is always a lag of one season in presenting the results obtained from the tobacco investigations, due to the necessity of selling the leaf before the final data are obtained. This report, therefore, covers the work that was mostly conducted in the 1937-38 season.

Another comprehensive series of experiments and simple demonstrations was carried out by various members of the field staff of the Agriculture Branch.

Climatic conditions adversely affected the late section of the Mareeba-Dimbulah crop, as well as crops in all other districts except the south-west, and it was, therefore, difficult to obtain dependable data in some of the investigations. In several cases adverse climatic conditions, lack of sufficient co-operation, or other adverse factors necessitated abandoning certain field experiments. Definite progress was made, however, in solving some of the problems associated with the tobacco-growing industry in this State.

During the 1938 seedbed season, tobacco-growers were advised that the seedbed disease, known as "yellow patch," which has caused increasing concern during the past few seasons, could be avoided by using nitrate of soda as the sole source of nitrogen in seedbed fertilizers, instead of mixtures containing organic forms of nitrogen. This recommendation was based on investigations and observations on this disease made in North Queensland during the past few seasons. Seedbed demonstrations to illustrate the value of this recommendation were successfully established at both Dimbulah and Mareeba in August, and repeated two months later.

Further investigation of preparations to prolong the useful life of tobacco seedbed covers confirmed previously reported results that alum-lead acetate or Shirlan A.G. could be recommended for this purpose.

Rate of seed-sowing experiments indicated that a sturdier type of plant could be obtained by sowing seed at a lighter rate than is generally practised, and that about 1 oz. of seed to 2,000 square feet of seedbed appeared to be the most suitable rate of sowing. Seedlings from these experiments, which were conducted in the Miriam Vale district, were set out in field trials for further observation, but the severe drought conditions experienced did not permit statistically significant results being obtained. There was a suggestion, nevertheless, that higher yields and values could be obtained with plants from comparatively lightly sown seedbeds.

Seedbed experiments in the Mareeba district indicated that, while some degree of control over blue mould infection could be obtained with colloidal copper, a more effective control resulted from the use of benzol or a combination of benzol and colloidal copper. When seedlings from these experiments were further observed for disease incidence in the field at Mareeba and Bowen, there was a suggestion that less frog-eye occurred where seedlings had been sprayed with colloidal copper in the seedbed, or where plants were primed in the field. This question is also referred to in the report of the Plant Pathological Section.

At Bowen, Mackay and Dimbulah, confirmatory data was obtained that the American plough cultivation method was superior to the local procedure. At the last-named centre a preliminary investigation gave promising results with a 4 feet 6 inches spacing between the rows and 21 inches spacing between the plants in the rows.

Fertilizer experiments indicated that at Dimbulah the best results were obtained where 25 lb. of nitrogen, 80 lb. of phosphoric acid, and 30 lb. of potash were applied per acre. In the Mackay district, exploratory trials, notwithstanding very adverse conditions, suggested that yields might be enhanced by either applying the mixed fertilizer or the nitrogen and potash components in two applications. In the Miriam Vale district weather conditions were quite abnormal, but interesting information was obtained on the effect of nutrition on drought injury. Statistical investigations indicated that increased drought injury occurred with increasing quantities of nitrogen, and optimum quantities under the environmental conditions experienced consisted of 30 lb. of nitrogen and 70 lb. of phosphoric acid per acre. Field observations also suggested that drought injury was reduced where relatively large quantities of potash were applied.

The varieties Warne and Kelly gave the highest yields in an experiment at Dimbulah, but conditions were so adverse that reliable data could not be obtained for leaf value. In the Miriam Vale district, Virginia Bright Leaf, a new variety for Queensland, gave the highest yield of all the varieties. Because of drought conditions, differences in value were not investigated.

In rotation trials, natural weed growth gave the best results where it preceded tobacco after a crop of peanuts at Mareeba, or after tobacco at Gayndah. Peanuts were best preceding tobacco at Home Hill and second best at Gayndah.

In the Mackay district, simple exploratory experiments indicated that either rye or canary grass gave promising results as winter cereals to precede tobacco. In these experiments there was also a suggestion that the efficiency of the fertilizer for tobacco might be improved by the addition of magnesium.

SORGHUMS.

The yields of grain sorghum seed, obtained by farmers in recent years in trial plots of different varieties of both the kaffir and the milo types of sorghum, and in the varietal tests and comparisons of sorghum and maize conducted at the Biloela Research Station, indicated that in the agricultural districts experiencing less than 30 inches of rain, grain sorghums can be expected to produce as well as and frequently better than maize on many of the soil types of these areas.

During the past season, a comprehensive programme was carried out in conjunction with the Director of Agriculture and Senior Research Officer, and several field officers of the Agricultural Branch, to test the merits of the Hegari, Kalo, Wheatland Milo, and Day Milo grain sorghums, in comparison with the leading variety of maize in the respective districts in which the experiments were located. The climatic conditions experienced as a whole were favourable for good growth of both the sorghums and the maize, and an interesting set of results will be obtained. All the experiments have not been harvested and threshed at the time of writing, but it would appear that the leading variety of sorghum in each experiment has generally out-yielded the companionate maize variety.

A representative number of other varieties of grain sorghums and sorgos, or saccharine sorghums, as they are frequently called, was also tested in several of the most important agricultural areas, preliminary to selecting a comprehensive range of sorgos and kafir and milo grain sorghums for inclusion in district varietal trials.

In addition to the varietal trials, pure seed-selfing plots were established in the Rockhampton, Kingaroy, and Roma districts to ensure ample supplies of seed for seed increase plots and varietal trials in the future.

Some 15 acres of sorghums were grown at the Biloela Research Station, which embraced pure seed areas, varietal tests of both grain sorghums and sorgos, and row spacing trials. Of the grain sorghums grown in Queensland for some years, the Kalo and the Wheatland Milo varieties led in yields of seed per acre. The Kalo variety, which has given the highest yields of grain at the station in most of the trials conducted over four seasons, was also tested against the most promising of several kafir and milo types introduced from the United States of America and grown at the station in the 1937-38 season. It was also tested against a comprehensive range of the varieties of grain sorghums that have been grown in this State for several years. The general results obtained indicated that, under the conditions experienced, the Kalo variety was superior to all but a few of the other varieties. Some of the leading newer varieties yielded very satisfactorily, and may prove to be of marked value for certain districts.

A varietal trial of six promising sorgos, introduced in the 1937-38 season, yielded excellent returns with the leading variety producing 25 tons of green fodder per acre. The merits of the best of these varieties will be tested in the coming season against the varieties of sorgos commonly grown in this State.

Seed of some fifty odd varieties of grain sorghums and sorgos was received during the season from the United States of America and was grown at the Biloela Research Station for pure seed multiplication. Altogether a total of ninety-five varieties of sorghums were studied at that centre, and pure seed of these was obtained for conducting tests in other areas in future seasons.

Trials were also conducted with the Kalo variety at the station and in the Kingaroy district, to provide evidence as to the relative merits of various row spacings, ranging from a 7-inch interval up to 49 inches. Some reduction in the size of the heads occurred in the closer row spacings, even under the good growing conditions experienced, but better total yields of grain per acre were obtained in these row spacings in both experiments. In a row-spacing test, conducted at the station during the 1937-38 season, under very dry conditions, the results rather indicated that row widths of less than 3 feet might not be satisfactory in dry areas.

The general results obtained in the experimental programme, and also in commercial plantings during the season, have provided evidence of the advisability of growing sorghums on an extensive scale both for grain and fodder production in most of the districts receiving less than 30 inches of rain in the south-eastern and central sections of the State.

PASTURES.

A comprehensive long-term programme of investigations dealing with the most important pasture problems of the State was drawn up during the 1938-39 departmental year and received approval. Certain of these investigations were selected for immediate initiation, but it was not possible, for various reasons, to start all the desired projects.

Pasture renovation and legume adaptation experiments were initiated at Dayboro and Cooroy. Following on a survey dealing with the rehabilitation of pastures in the Dayboro district, mentioned in last year's report, an experiment was started in that area to investigate the merits of various methods for restoring the original pastures of paspalum, and also for increasing the carrying capacity of the existing blue couch grass pastures that have replaced the paspalum. In connection with the latter, it was noted that the total exclusion of stock from blue couch grass paddocks throughout the whole of the growing season resulted in no appreciable increase in the bulk of grass produced. The same result was observed in parts of the Kilcoy district, to which the blue couch grass survey was extended during the year.

A paspalum pasture renovation experiment, designed mainly to determine the frequency with which paspalum pastures on the yellow clay soils of the Cooroy district require to be renovated, was commenced at West Cooroy. Various incidental aspects of pasture renovation also are being studied. Results from trials dealing with the incorporation of white clover in paspalum pasture suggest that, if mid-summer renovation is practised, it is advisable to sow clover seed immediately following renovation rather than to delay sowing until the grass has recovered from the ploughing.

The top-dressing of paspalum pastures in the Southern Coastal districts with superphosphate does not always result in a beneficial response being obtained. Accordingly, the testing of various methods of placement of superphosphate in paspalum pasture was commenced, and in connection with this work phosphate fixation in these pasture soils is being investigated.

As part of the pasture improvement programme of the Southern Coastal districts, it is desired to incorporate legumes in the pastures, and preliminary to this work an investigation of the suitability of a wide range of legumes was commenced at Cooroy and Dayboro.

Investigations in the experimental plots established in the Blackall district three years ago were continued. The results obtained to date indicate that the soil type appreciably influences the rate of regeneration of the vegetative cover under the different treatments being studied. In some instances, a very slow increase in suitable grasses has resulted from resting an area, while, on other soils, no improvement can be noted over the adjacent grazed areas.

A survey was made of the Springsure, Emerald, and Clermont districts, as well as of the regeneration of a drought-stricken area near Arillabah, following early summer rains, and much useful information was obtained that will assist in forming a background for planning more intensive operations.

An extensive botanical survey was also made in the Tara district, in the area reclaimed from prickly-pear, in the course of an investigation with an animal nutrition research officer, and an assistant research officer, into the possibilities of this district for sheep-raising.

An important investigation in the pasture improvement programme is the study of the value of various methods of trapping moisture in pastures. Experiments along these lines were started at Dayboro' and the Biloela Research Station, and arrangements were also completed for initiating two such experiments in the Blackall district during the early part of the coming season. Although the distribution of the rainfall at the station was such as to favour good growth of the grass, the areas that were furrowed with a single mould-board plough at 4 feet and also at 20 feet intervals maintained a higher percentage of superior species throughout the season than did the control areas. A reduction in the production of grass resulted at first in the areas with the more closely-spaced furrows, due to a greater area of the sod being disturbed, but, during the latter part of the season, a greater production of grass, which was of a higher quality, was obtained in this treatment than in any other.

In investigations conducted at the Roma Demonstration Area and at the Biloela Research Station, it has been observed in several seasons that the older broadcast areas of introduced grasses reacted more severely to adverse conditions than new plantings of these same grasses. Experiments were accordingly started to test the merits of sowing a grass in wide broadcast areas as compared with 3 feet strips of grass alternated with 3 feet cultivated strips of bare soil, using Rhodes grass (*Chloris gayana*) and Blue Panic (*Panicum antidotale*) at the former centre, and Rhodes grass in 5-foot strips alternated with 4-foot cultivated areas at the Research Station.

The adverse conditions experienced at Roma resulted in such poor stands in the experiments designed for that centre that they will have to be replanted. A satisfactory stand was obtained in the experiment at the Biloela Research Station, however, and it yielded interesting information for the rest of the season. Nitrate determinations conducted in it on a monthly basis indicated that the grass in both the broadcast and strip areas significantly reduced the nitrate content of the upper 6 inches of soil at the same rate. There was also some tendency for the grass in the alternated strip areas to reduce the nitrate content of the interspaced cultivated strips as compared with the fallowed controls. It is anticipated, however, that by frequent cultivation of the interspaced areas, the soil will be aerated sufficiently to allow of the replenishment of the supplies of nitrates being effected, and thus stimulate a greater growth of grass of higher quality in the strips than will be produced in the accompanying unrenovated broadcast areas.

During the year, preliminary studies of Curly Mitchell (*Astrebla lappacea*) in relation to the storrage of food supplies were made. The results obtained indicate that this grass stores large quantities of starches in the culms, rhizomes, and roots. These are utilized by the growing shoots, the starches in the culms being apparently used by the culm shoots, while the starches in the rhizomes and roots are used for the development of the innovation shoots. Further work is required to elucidate the period in the life of the plant at which the reserves of starches are stored and for what period after the new growth commences the plant draws on these reserves. Possessing such knowledge, it should be possible to obtain a sound understanding of the effects of different methods of pasture management on the Mitchell grasses.

Three cases of suspected plant poisoning of sheep were investigated, and in one a hitherto unsuspected poisonous plant was discovered. Feeding tests of this plant, *Threlkeldia proceriflora*, which is known as the Soda Bush, were conducted at the Animal Health Station at Yeerongpilly, and proved it to be poisonous. The cause of many mortalities of sheep in the Longreach district has been traced to this plant.

An area of land at the demonstration area at Moggill, near Brisbane, was made available during the year for plant introduction purposes. The material planted comprised twenty strains of lucerne, thirty clovers and medics, thirty grasses, seven lespedezas, and six vetches. A number of lots of seed was supplied by the Council for Scientific and Industrial Research.

BIOMETRICS.

The volume of investigations conducted during the past twelve months by the officers of the Department of Agriculture and Stock was appreciably greater than that of the previous year. This increase in investigational work created a continuous demand for biometrical aid, both for advice in planning experiments, so that the results obtained would admit of statistical treatment, and in the subsequent analyses of the data collected.

The experiments ranged from a few simple comparisons by the half-drill strip method, and through a large number of randomized blocks and latin squares, to the more complicated factorial designs, and included investigations into a wide variety of problems relating to agronomy, agrostology, entomology, horticulture, plant pathology, plant breeding, and plant physiology. Altogether, some seventy experiments were analyzed during the year.

The results obtained thoroughly indicated the value of using the most modern technique of experimentation and methods of analyses of the data collected from properly designed experiments. The use of such technique has made it possible to obtain comprehensive information with a minimum expenditure of time and money.

GENERAL AND ACKNOWLEDGEMENTS.

The officers of the Agricultural Section of the Division of Plant Industry (Research), in addition to conducting a heavy programme of investigational work, have engaged in considerable general advisory activities. A series of illustrated talks to farmers was given in connection with the propaganda campaign, sponsored by the Queensland Cotton Board, to increase the acreage of cotton during the coming season.

The valuable co-operation given by the Director of Agriculture and Senior Research Officer, and the fact that various members of the Agriculture Branch staff carried out the actual work connected with a number of the experiments reported upon, is greatly appreciated and gladly acknowledged. Likewise the Agricultural Chemist and several members of his staff have rendered valuable assistance in regard to making various analyses, without which several of the investigations could not have been conducted.

W. G. WELLS,

Director of Cotton Culture and Senior Research Officer (Agricultural Section).

(2) REPORT OF THE BOTANICAL SECTION.

During the past year the Botanical Section has been occupied primarily in identifying and reporting upon native and cultivated plants and plant products, and in maintaining and augmenting the collections of the herbarium and museum. The Government Botanist, Mr. C. T. White, left Australia in January to take up his appointment as Australian Liaison Officer at the Royal Botanic Gardens at Kew in England. Here he will devote a large proportion of his time to working on Queensland material or on material of interest to Queensland. The work of the section has proceeded along previously accepted lines, and some of the more important features of its activities are discussed in the following paragraphs:—

Poison Plants and Suspected Poison Plants.

When outbreaks of sickness occur in stock, it is frequently assumed that the vegetation upon which the animals have fed is to blame, and it is natural that information regarding the character of the vegetation should be sought. Consequently, the Botanical Section, during the year under review, received a large number of specimens of plants suspected of being poisonous or harmful to stock. These specimens were sent in by the Poison Plants Committee of the Department, the Animal Health Stations at Yeerongpilly and Oonoonba, veterinary surgeons, stock and dairy inspectors, pastoralists, farmers, and others. In most cases, specimens of plants received by the Poison Plants Committee for experimental feeding tests, and by the Agricultural Chemist for analysis are submitted to the Botanical Section for verification of the botanical name. Records are then compiled in this section under the name of each species showing the general habit of the plant, the kinds of animals poisoned or suspected of being poisoned by it, the evidence of toxicity, any references to published papers dealing with the species and its association with poisoning or suspected poisoning, the geographical distribution of the plant, the districts from which supplies of the plant are obtainable, and other particulars. A considerable volume of information on these plants is accordingly being steadily accumulated. Furthermore, in most instances in which specimens are sent direct to the Botanical Section as being suspected of causing poisoning or being harmful, copies of the reports thereon, prepared by the section, are referred to the Poison Plants Committee, and in this way the committee is further informed of the complaints of pastoralists, drovers, farmers, and others, concerning vegetation. Thus fresh cases for investigation and possible sources of supply of suspected plants are introduced to the committee. The activities of the committee have produced important results which enable the Department to give precise information regarding the properties of several plants occurring in Queensland pastures.

Weed Taint in Meat.

One rather unusual instance of the effects of pasture plants on food came under notice during the year, the Department's attention being drawn to the occurrence of a peculiar turnip-like taint which occurred occasionally in meat in a certain country town. From the description of the taint and the prevalence of certain weeds at the time of its incidence, it was considered that it might be due to the stock feeding on cruciferous plants, and perhaps more particularly on wild mustard, *Lepidium ruderale*. As anticipated, the taint disappeared with the advent of the warmer summer weather, when weeds of the crucifer family become much less prevalent. It is possible that the taint may recur in the late winter of the present season.

Native Plants in Human Diet.

In the course of the year the section was associated with discussions by the Queensland Nutrition Council relative to the possibilities of native plants being used as human food. As a result of these discussions the Department of Health and Home Affairs and this Department are co-operating in a scheme to publish illustrations, descriptions, and directions for the use of edible plants which occur in different parts of the State. In this way, it is hoped to bring under public notice those plants which can be safely recommended as an advantageous supplement to the ordinary diet of people in different parts of Queensland.

Food Plants of the Aborigines.

In the past few months, specimens of fruits and bulbs of native plants which provide sustenance for the aborigines have been identified by the section. These specimens were submitted by the Department of Health and Home Affairs, which received them as a result of a survey of such matters in North Queensland. It is understood that the specimens, after being reported upon botanically, are to be investigated and reported upon by the Government Analyst.

School Project Clubs.

A very large number of specimens of grasses, weeds, shrubs, and trees were received from secretaries of school project clubs, and these were identified and reported on. In all cases where they were applicable, notes were supplied as to the economic value of the plants from which the specimens were derived. This service should be helpful in encouraging pupils to observe the vegetation in the vicinity of their schools and their homes, and in assisting them to assess its economic importance.

Forest Botany.

As in previous years, a considerable proportion of the time of the staff of the section has been spent on botanical work in connection with the forests of the State, and a large number of specimens were identified on behalf of the Forestry Sub-Department of the Department of Public Lands.

The Commonwealth Forestry School conducted a forestry camp at Turallin, in the Milmerran district of the State, in May, 1939, and in the course of investigations carried out at the camp some hundreds of botanical specimens of trees, shrubs, and herbs were collected. These specimens were sent to this section for identification and most of them have now been identified, although a few have been held over for closer examination.

In the course of the year, a paper comprising field notes on sixty-four species of trees of the tropical rain-forests, and notes on the rain forests of the State, was prepared for publication and issued in the *Queensland Agricultural Journal*.

Undescribed and Unrecorded Plants.

In the course of field and herbarium work, further undescribed species and plants not previously recorded for the State are met with. Nineteen such new species were recently described and the descriptions published in "Contributions to the Queensland Flora," No. 6, which appeared in the 1939 volume of the "Proceedings of the Royal Society of Queensland."

Field Work.

The Government Botanist, Mr. C. T. White, spent a week on field work on the Eungella Range, west of Mackay, in August, 1938. A large number of botanical specimens were collected and some of these were incorporated in the herbarium, while others were used for exchanges with kindred institutions in other parts of the world.

As a result of a visit to Kindon Station in the Goondiwindi district in December, a comprehensive report was submitted on the Kindon pastures and vegetation generally.

Acknowledgments.

During the year, Mr. S. T. Blake, Walter and Eliza Hall Fellow in Economic Botany, has frequently utilised the section's herbarium and library, and the section is indebted to him for the determination of many sedges, a group of plants of which he has made a special study.

W. D. FRANCIS,
Botanist.

(3) REPORT OF THE BUREAU OF TROPICAL AGRICULTURE.

The second half of the 1938-39 departmental year was devoted by the Director of Tropical Agriculture to a survey of the agricultural possibilities of North Queensland from the economic aspect. Such a survey was essential as soon as he assumed control of the Bureau of Tropical Agriculture, and it was accordingly commenced a few weeks after he arrived in Queensland.

The work of the Bureau must of necessity be directed towards achieving a flexible and stable form of agriculture, in addition to the production of sugar-cane, which will lead to closer settlement of the tropical coastal region. In formulating a research programme with such an objective, stress must be placed on the necessity for intensive, rather than extensive, methods of agriculture, in order to meet the requirements of closer settlement, and to ensure, as far as is practicable, satisfactory remuneration to the settler. The research programme has been designed accordingly.

Pasture Development and Improvement.

An early and satisfactory conversion of biotically induced grassland, and natural grassland, to improved pasture, is a matter of definite importance to the farming community on the coastal belt of North Queensland. Research on the many problems which arise in this connection is necessary, and plans are now under consideration for a series of experiments, on selected farms and at the Bureau of Tropical Agriculture, to investigate thoroughly the economic possibilities of such a development. Experiments with numerous grasses are in progress, and during the coming year it is proposed to carry out trials with various pasture mixtures of the most promising grasses and legumes. The first stage of pasture improvement, increased fertility and organic matter accumulation, will be associated with the introduction into the sward of a suitable legume.

At the Bureau, extensive trials are being carried out with legumes, particularly fodder legumes, to discover suitable types for pasture work. In this connection it is satisfactory to report that Brazilian lucerne, *Stylosanthes guyannensis,* which is already established at South Johnstone, is yielding promising results. This legume is aggressive, drought resistant, and capable of withstanding successfully heavy and continuous rain. Palatability trials with freshly cut samples from the Bureau have been carried out at the Animal Health Station, Oonoonba, and the results indicate that this legume is readily eaten by stock. It is now being incorporated in mixtures with various grasses to obtain data in respect to its value as a pasture component. Promising results have been obtained with several other legumes, and a palatability trial with each has been concluded.

Important information has been obtained from the experiments conducted on paddocks at Tully, and the results of this work, from the animal husbandry point of view, have been summarised in a paper, "Cattle Fattening on the Coastal Wet Belt of North Queensland," by Professor H. R. Seddon and C. R. Mulhearn, which was read at the recent meeting of the Australian and New Zealand Association for the Advancement of Science.

Lucerne Experiments.

Another phase of legume experimentation at the Bureau, is a thorough investigation into the possibilities of economic lucerne cultivation. Two comprehensive experiments are being carried out, one with Hunter River lucerne and the other with Brazilian lucerne. The experiments include the application of four levels of lime and five levels of superphosphate, alone and in combination. A series of analyses will be made in conjunction with these experiments to determine the limits of nutrient content fluctuation with growth and fertilizer application. Concurrently, trials are in hand with eighteen different types of lucerne obtained from the Council for Scientific and Industrial Research.

Fodder Trials.

Plots containing the following fodders have been planted:—*Echinochloa frumentacea* or Japanese barnyard millet, *Echinochloa crus-galli* or common barnyard grass, and *Sorghum Roxburghii* var. hians. Investigation into the economic production of various fodders is a matter of considerable importance, following increased interest in animal husbandry.

Horticultural Investigations.

Special attention is being devoted to the asexual propagation of the mango at the Bureau by an officer of the Fruit Branch, who is associated with all the mango experimental work in North Queensland; various methods of budding are under trial to determine which is the most satisfactory for commercial practice. Investigational work is also being carried out on passion fruit, granadilla, and papaw; and the preparation of seedling material for a citrus root stock trial has been undertaken.

Agricultural Research on the Atherton Tableland.

Close contact has been maintained with the development of research work on the Atherton Tableland.

Considerable evidence has been obtained relative to the fertilizer requirements of maize grown in different areas. The development of silage on the Tableland has been rapid, and experiments with various legumes for silage purposes have been carried out by the departmental officers stationed there.

The tobacco-growing areas of Mareeba and Dimbulah have been visited, in order to keep in touch with the progress of experimental work on this important crop.

PLANT-BREEDING.

Genetical work has been carried out on maize, tobacco, and papaw. With maize, the objective is to obtain a strain of seed which will produce a really satisfactory crop under the conditions prevailing on the Atherton Tableland. Various tobacco crosses have been made at the Bureau, which have been tested in the tobacco-growing areas of Mareeba and Dimbulah. The breeding work with the papaw is concerned with the production of varieties which will comprise only bearing trees, and a study of the inheritance of sex expression and sex vigour relations.

ANALYTICAL WORK.

Analytical work connected with the cattle fattening experimental programme was continued. In addition, a number of soil samples from various localities have been analysed to determine their value for pasture development.

ACKNOWLEDGMENTS.

The assistance given by the Council for Scientific and Industrial Research, in supplying seed of various legumes for trial at the Bureau is appreciated. The co-operation of the Acting Director of the Animal Health Station, Oonoonba, in the pasture experiments at Tully, and in arranging for palatability trials with various legumes from this Bureau, is gratefully acknowledged.

J. LEEMING SCHOFIELD,
Director of Tropical Agriculture.

(4) REPORT OF THE ENTOMOLOGICAL SECTION.

The year 1938-39 has been a relatively good one, with few crop failures due to pests or other causes. Nevertheless, the incidence of certain insects possessing economic importance was most unusual. Some minor pests proved destructive in certain localities, and a few which normally cause appreciable losses every year were less troublesome than usual. The phenomenon must be ascribed to climatic conditions, heavy winter and spring rains having preceded the normal wet season, which was broken by hot dry weather in January. The effect of these conditions on either the insects themselves or on their associated parasites could create such an inversion in the pest position.

Deciduous Fruit Pests.

The codling moth, *Cydia pomonella* L., was very destructive in the apple crop at Stanthorpe and the amount of fruit rejected because of that pest was therefore considerable. The control programme was complicated by unsettled weather, which made strict adherence to any spray schedule almost impossible.

In the codling moth experimental programme, the following cover sprays were compared: lead arsenate, white oil, and a number of combined sprays containing white oil and nicotine sulphate in varying proportions. Of the several sprays tested, that consisting of white oil 1⅓ gallons, nicotine sulphate 1 pint, and water 80 gallons, gave significally better results than the others. The most effective spray schedule, therefore, requires the use of lead arsenate as a calyx spray, the necessity of which was established last year, and cover spray applications with the foregoing combined spray.

In the same experiment, statistical data were obtained on the relative merits of timing cover sprays (*a*) at three-week intervals, (*b*) at five-week intervals, and (*c*) as indicated by moth records in suitably placed lure traps. Spraying at five-week intervals proved inadequate, but the other timed schedules gave quite good results. The lure trap method of timing sprays can therefore be considered as efficient as any alternative, and it has an advantage in that with it the number of spray applications is kept down to a minimum.

Having established the relative efficiency of possible codling moth sprays, and estimated the merits of spray timing methods, it is now practicable to issue more precise recommendations to the grower than has hitherto been possible.

The Queensland fruit fly, *Chaetodacus tryoni* Frogg, after being more or less quiescent in deciduous fruit areas for some years, increased in numbers in early spring and summer. Further experiments have been initiated at scattered centres to study the vexed question as to whether or no fruit flies do over-winter in the Stanthorpe district. The capricious behaviour of the presumed spring migrants suggests that, in some seasons, in a few locations, survival may be possible in spite of very strong evidence to the contrary in the district as a whole.

Following laboratory trials at Stanthorpe in 1937-38, field tests with three bait sprays in which tartar emetic, sodium fluosilicate, and lead arsenate were respectively the toxic ingredients, were initiated on plum trees. Twelve Stanthorpe orchards were under test, these being regarded as three groups of four orchards; three orchards in each group were treated with one or other of the bait sprays, the fourth orchard in each case being left untreated as a control. Losses, estimated in case lots, demonstrated that all three bait sprays in each group of four orchards effected considerable improvement over the control orchard.

Lure potentialities in fruit fly control are again the subject of investigation. The work was re-commenced in autumn at Nambour, and so far approximately forty lures have been tested.

Strawberry Pests.

A survey of strawberry pests conducted in winter and spring indicated that pathological and physiological disorders were of considerable importance in the strawberry crop, and it would appear that these disorders, in past years, have frequently been erroneously attributed by growers to the incidence of various pests. Actually neither thrips nor red spider—the two commoner pests—were at all common, and conditions have not permitted conclusive insecticidal experiments. Laboratory and insectary studies have, however, demonstrated beyond doubt that one species of thrips, *Neophysopus fragariae* Gir., is the cause of "russetting" on the fruit, a common and frequently serious defect. The damage follows injury at a very early stage in the development of the fruit. Now that this point is clear, control should be simplified, because "russetting" is a much better guide to thrips populations than any other symptom, and control measures can be guided by observable criteria.

Spray and dust trials are in abeyance pending the availability of suitably infested experimental material, but some observations are in progress as to the effect of treating runners with hot water or nicotine sulphate before planting on the later growth and on pest infestation. These trials should determine the applicability of overseas strawberry pest control practice to Queensland conditions.

Red spider, *Tetranychus telarius* L., has for long been reputed to show varietal preferences in Queensland strawberries, but these preferences are not well delineated. This is probably due to the fact that strawberry varietal names at present mean very little; alleged varieties include plants with quite distinct habits. Until some clarity is introduced into strawberry nomenclature, the significance of varietal preferences by red spider, if any, can scarcely be determined.

BANANA PESTS.

Since the present recommendations for the control of the banana thrips, *Scirtothrips signipennis* Bagn., were first published in 1937, some plantations have warranted treatment both north and south of Brisbane, and the number of such plantations has definitely increased during the year under review. The recommendations continue to be effective, but the costs of treatment are relatively high and may hamper the general adoption of the recommendations in an emergency. Substitute materials for the 11 oz. hessian bags have therefore been investigated. Various kinds of paper bags impregnated with preservatives of one kind or another, failed to withstand the torrential rain and strong winds during the summer months. Tubes composed of 11 oz. hessian proved useful, however, and can be procured either in bunch lengths or in rolls to be cut as required on the plantation. Costs are less and the tubes can, by tying the ends, be made to function as bags in current recommendations. The saving thus effected should tend to popularise control measures.

To assist in the control of the banana weevil borer a large colony of a Hydrophilid, *Dactylosternum hydrophiloides* McL., was obtained by the Council for Scientific and Industrial Research from the Federated Malay States on behalf of this Department. The larval stage of the Hydrophilid is predatory on the larvae of the pest. After being kept under observation in quarantine for three weeks, the insects were released at Tallebudgera, a compact banana-growing area. Later observations show that, although the numbers are now small, one generation has been completed, and there seems no reason why the insect should not ultimately become established in Queensland.

The investigation of methods for destroying the aphid, *Pentalonia nigronervosa* Coq., on bunchy-top infected banana stools was concluded. The standard Queensland method, in which kerosene is poured into the funnel leaf of the plant, was found to be quite adequate for the treatment of diseased plants.

PESTS OF OTHER FRUITS.

In the Central districts, outbreaks of the fruit-piercing moths belonging to *Othreis fullonica* L., and other species, have been linked with heavy larval populations on a native vine, *Legnephora moorei*, which is widely distributed in coastal and sub-coastal areas. These pests caused extensive losses in citrus during 1938 in Central and Southern coastal fruit areas, but the position in 1939 has not been acute, though in the Central-West and far North losses have been greater than for some time past. Control measures are not fully satisfactory and work on this project is being continued.

The fruit spotting bug, *Amblypelta lutescens*, Dist., has been the subject of some small scale experimental work at Rockhampton, where papaws have suffered considerably. The plant reactions of gumming, splitting, and frequent dieback, are more acute where the papaws, for cultural or other reasons, are not making rapid progress. Control of this pest seems quite practicable if nicotine dusts are systematically applied when required, but close observations on bug populations and plant appearances are necessary for the correct timing of treatments.

A recrudescence of the bronze orange bug, *Rhaccocoris sulciventris*, Stal., occurred during the summer on the Blackall Range, but seemed localised to the south of Montville. Severe damage to fruit and young growth followed. The resin-caustic soda-fish oil spray was used fairly extensively in autumn, when the pest is most vulnerable. The way is now clear for more extensive use of this spray as a soft soap concentrate compounded to the official formula is commercially available. Normally the occasional use of this excellent general purpose spray in autumn should make outbreaks of the pest rare phenomena.

PESTS OF VEGETABLES.

The recently popularised white oil-nicotine sulphate spray for controlling bean fly, *Agromyza phaseoli* Coq., has been extensively used commercially in southern coastal Queensland, during the past year. In the earlier absence of a control measure for this pest, growing beans other than in late autumn, winter and early spring, was a speculative proposition, except in the Stanthorpe district. The introduction of the spray immediately led to an extension of the bean-growing period in coastal districts, and a provisional recommendation of the application of two or three sprays to the young plants frequently proved inadequate. This was not unexpected for a greater number of treatments had already proved necessary in North Queensland, where the climate is, of course, warmer. Spraying requirements for various periods of the year are being studied at Nambour, and conclusions should shortly be available.

The green vegetable bug, *Nezara viridula*, L., was rather abundant in spring in some parts of Southern Queensland, but more particularly on the Darling Downs, where high populations were recorded from various hosts. Field observations made at the time showed that the introduced parasite, *Microphanurus basalis*, Wall., was quite common and apparently acting as an important check on the pest. No difficulty was experienced in rearing colonies of the parasite for distribution to Central and North Queensland, and liberations were effected at Rockhampton, Bowen, and Cairns, where the pest has been troublesome in recent years. The parasite has now been recorded from Bundaberg, some 200 miles away from the nearest site of liberation, and one must assume that dispersal through trade channels in eggs on consigned vegetables has taken place on a fairly extensive scale.

CEREAL PESTS.

Sorghums are becoming increasingly important in Queensland, and during the 1938-39 departmental year, pests thereof required some attention. At Biloela a Cecidomyid, which is very similar to, if not identical with, the American sorghum midge, *Contarinia sorghicola*, Coq., proved very destructive to the grain types. An earlier record in 1930, from the Lockyer district, concerned the same insect, and observations at various field stations serving agricultural areas, indicate that the pest is common in all sorghum-growing districts, and causes a considerable amount of damage.

A widespread outbreak of the army worm, *Cirphis unipuncta,* Haw., occurred in spring, the infested area extending from the Darling Downs to the Callide Valley, though the injury was most serious in the former, where winter cereals are widely grown. Control measures are more or less standardised, an arsenical-bran bait being used. Farming activities were not unduly disturbed, except in isolated localities, primarily because excellent rains ensured an abundance of feed at the time of the outbreak and guaranteed a rapid recovery of most crops.

Sporadic outbreaks of the blue oat mite, *Penthaleus bicolor,* Froggatt, have occurred in wheat and oats on the Darling Downs. Either the pest has been more abundant than hitherto or earlier outbreaks have been localised and unrecorded.

COTTON PESTS.

Further work on swabbing and dusting methods of controlling the major boll and leaf-eating pests of cotton were planned for the season, but pest behaviour has been quite extraordinary, and some phases of the work lapsed for want of adequate crop infestation, particularly by corn-ear worm, *Heliothis armigera,* Hb. The season opened well and spring populations of corn-ear worm were both early and somewhat higher than usual. Extremely dry and hot weather during December and January, however, though not affecting ultimate crop yields, played havoc with corn-ear worm in the more important cotton-growing areas. As a result the pest only became really destructive in isolated areas. Apart from one field experiment in which swabbing with the lead arsenate-molasses-water solution improved yields appreciably, it is questionable whether any significant results will be forthcoming from the 1938-39 programme. The maize trap crop experiments suffered the same experimental disability. Some worthwhile observations have, however, been gathered on corn-ear worm reactions to climatic vagaries.

The cotton jassid, *Empoasca terrae-reginae,* Paoli, proved more serious than for some time past, and many areas were heavily infested late in the season. Work on this pest at the Biloela Research Station is a joint project between the plant breeder and the entomologist, and strain resistance is a feature of present investigations.

Leaf-eating caterpillars were extremely numerous late in the season, some, e.g., *Anomis flava,* Fabr., which are normally of quite minor interest, being in plague proportions in some localities.

The pink bollworm, *Platyedra scutigera,* Hold., population increased enormously towards the end of the season and snap cotton arriving at the ginneries has been heavily infested. It is therefore imperative that the clean-up of cotton crop residues should be both thorough and complete to ensure the minimum of over-wintering in this species. Publicity has been given to this necessity.

PASTURE PESTS.

A number of pasture pests have warranted attention. Seed harvesting ant depredations in Rhodes grass areas have been the source of considerable loss in both alluvial and scrub soil plantings for some years. Investigations with repellants were therefore commenced at Biloela. *Pheidole impressiceps,* Mayr, appeared to be the dominant species at that centre, though several others were involved. Some readily available products are certainly repellent, but it is necessary to determine dilutions which give sufficient protection without adversely affecting the seed germination. Tar derivatives hold the greatest promise.

There is some field evidence that cultural methods have some bearing on ant depredations, in so far as they can influence both the soil cover over the seed and the rapidity of germination. Experiments comparing pre- and post- sowing treatments with various implements confirm these observations, and it seems reasonable to suppose that by the selection of suitable cultural practices and some of the more desirable seed treatments, losses may be appreciably reduced.

Results from such work may have an important bearing on a comparable problem on the Darling Downs, where *Pheidole ampla,* Forel, is frequently a disturbing factor in obtaining uniform stands of wheat.

The insect, *Psara licarsisalis,* Walk., is a Pyraustid that is generally distributed through the State, though it is seldom economically important. This year, however, it caused a threatening position in autumn pastures in Southern Queensland. Infestation was widespread, but the arsenical-bran bait, now familiar to most farmers, proved a quite satisfactory control measure. At Toogoolawah, a localised outbreak of the army worm, *Spodoptera exempta,* Walk., preceded the general influx of *Psara licarsisalis.*

White grubs, *Lepidiota caudata,* Blk., promise to be exceedingly destructive to pastures on the Atherton Tableland during the coming spring. Fortunately, recent work has demonstrated the practicability of growing and conserving ensilage crops and has given an impetus to improved practices which should tide many farmers over the critical period. Though white grubs are, and will continue to be, a problem, there can now be no doubt that in many parts of the district, a mixed farming programme is practicable, and, in fact, indispensible, for the profitable utilisation of the land.

Autumn plantings of lucerne were rather extensively attacked by the cutworm, *Agrotis ypsilon,* Rott., in Southern Queensland. Normally, *Euxoa radians,* Guen., is more commonly associated with this type of damage. Losses were not confined to lucerne, for reports of injury to autumn planted cereals and vegetable crops were received.

Work is under way to determine the vector of the virus associated with witches' broom in lucerne.

LANTANA INSECTS.

The lantana bugs, *Teleonemia lantaniae* Dist., liberated at Kairi and Fairy Bower, in North and Central Queensland respectively, on behalf of the Council for Scientific and Industrial Research, continue under observation. At Kairi a single colony was released in 1936. During the past year, following a period in which the bug could not even be found, the numbers have increased considerably. The bug population has been sufficient to destroy the top growth of lantana over several acres. Fluctuating populations are probable, but it does seem as if the insect may, in some localities, assist in keeping the lantana in check. Distribution from Kairi to areas north of Townsville has been authorised. At Fairy Bower the insects are permanently established and show signs of increasing to destructive numbers.

An indigenous Noctuid, *Hypena* sp., caused complete defoliation in an area of lantana at Blanch View, near the Toowoomba range. Larvae and pupae were, however, very heavily parasitised, and the outbreak suggests nothing more than a temporary lack of balance between the parasites and their Noctuid host.

FOREST PESTS.

Recent work both in Australia and overseas has proved conclusively that powder post beetle, *Lyctus brunneus* Steph., infestation in milled timber is largely dependent on the starch content of the wood. Methods of reducing the starch content of the bole of the standing tree before felling have therefore been further investigated. Exploratory tests at Stapylton on spotted gum indicated that high ringing, *i.e.*, ringbarking above the level of profitable utilisation, may lower the starch content to innocuous levels, and large scale experiments are now in progress at Dalby and Maryborough. Starch depletion has proceeded far enough. Six months after treatment at Maryborough, to allow safe felling, but a slightly longer period may be necessary at Dalby. There is at present every hope that logging programmes can be modified to permit the practice of high ringing, and thus the utilisation of timbers with a large proportion of sapwood which are particularly subject to powder post beetle deterioration. The work needs to be extended to other timbers, before the new principle can be generalised.

The pine bark weevil, *Aesiotes notabilis* Pasc., investigations current during the past two years have now been completed. The optimum temperature and humidity conditions for the development of each stage have been determined, and there can be little doubt that the rainforest temperature in all parts of the State favours development during the whole year, though activity is greatest in moist weather. With a revised method of pruning plantation hoop pine, the losses due to stub infestation have been almost completely eliminated. If thinning and pruning are carried out in dry winter and spring weather, bole injury through pine bark weevil infestation should be negligible. An improvement in current methods may be effected if thinnings are used as trap trees by cutting them some weeks prior to pruning.

Borer infestation, mainly *Platypus australis* Chap. and *P. froggattii* Samp., caused some concern in the Killarney logging area, where topography and rainfall often slow-up log haulage to the mill. Various log treatments with creosote, creosote combined with other chemicals, and proprietary products were therefore investigated, but present recommendations requiring the use of creosote, creosote emulsion, or a creosote-kerosene mixture, are unlikely to be superseded. Log treatment with insecticides in this particular instance was extremely difficult, and, except for special purposes, it is generally sounder policy to co-ordinate logging operations and milling so that the damage preceding utilisation is kept to a minimum.

The continuation of the work against the Queensland pine beetle, *Calymmaderus incisus* Lea, shows that annual applications of a solution containing equal parts of creosote and kerosene, if applied by injection or brushing methods, should normally eradicate the pest from infested hoop pine building timber.

RECORDS OF INTEREST.

Two pests of the Macadamia nut, namely *Candalides absimilis* Feld., and *Orgyia australis* Wlk., promise to become more important as the area under that crop expands. *Tortrix postvittana* Wlk., the lucerne leaf roller, has caused some leaf injury in strawberry crops on the North Coast. *Taeniothrips usitatus* Bagn. var. *cinctipennis* Bagn., was common on French beans in the Gympie area in spring. Two Oecophorids, *Philobota productella* Wlk. and *P. diaereta* Turn., were associated with localised pasture injury on the Darling Downs. *Chortoicetes terminifera* Wlk. has been of no importance during the year. Adults of the yellow-winged locust, *Gastrimargus musicus* F., however, were present in the Bowen-Townsville-Charters Towers sector in immense numbers, though with few important economic consequences as yet. Conditions there have been extremely dry. The Curculionid, *Tyrtacosus microthorax* Pasc., caused root and stem injury in hoop pine tubed stock at the Kalpowar forest nursery; the larvae burrow within the roots to considerable depths. *Prosphaeres aurantiopictus* L. & G., a Buprestid infesting hoop pine shortly after the trees are felled, has emerged from recently constructed dwellings very frequently during the year.

APIARY INSPECTION.

A new Apiaries Act and the associated regulations have been prepared and promulgated. Inspectional work was therefore resumed on a more intensive scale than for some time past. The industry appears to be growing, and as Queensland is singularly free from the more important widely distributed diseases and pests, the maintenance of a clean bill of health is imperative.

INSECT COLLECTION.

As additional cabinets became available further progress has been made in transferring the insect collection to more accessible positions. Acquisitions of new material from both the field stations and outside sources have been considerable.

ILLUSTRATIONS.

Illustrations for publication and exhibition purposes have occupied Mr. I. W. Helmsing's time fully during the year. Apart from those required for exclusively entomological purposes any necessary assistance has been given to other sections in the Division of Plant Industry (Research), to the Animal Health Station at Yeerongpilly, and to the Fruit Branch.

The valuable assistance given by the field staffs in Agriculture, Fruit, and Stock in supplying information on pest activities and collaborating in pest control programmes, is very much appreciated.

J. HAROLD SMITH,
Senior Research Officer (Entomological Section).

(5) REPORT OF THE HORTICULTURAL SECTION.

During the 1938-39 departmental year horticultural research activities have mainly been a continuation of work along the lines adopted in the previous year. In some instances, the actual field work was initiated during the year under review, following on laboratory work or a general survey of the problem at an earlier date. The chief investigational projects are discussed under the crops concerned.

DECIDUOUS FRUITS.

Deciduous fruits investigational work, which is being carried out in the Stanthorpe district has made considerable advance in certain respects.

The position regarding little leaf is now very satisfactory, and it is clear that, by the use of zinc sulphate as a spray in the dormant period of the trees' growth, the growers have at their disposal a highly efficient and economical corrective of the little leaf condition. As mentioned in last year's annual report, questions concerning the duration of the effectiveness of the treatment are of importance, but naturally these can be answered only by the passage of time. The incorporation of the zinc sulphate spray into general orchard practices has been worked out quite satisfactorily.

It was again impossible to carry out work on the problem of boron deficiency of apples, owing to the absence of this trouble during the comparatively favourable season that has just been experienced. As this deficiency has been rather rare during the past two years its comparative absence may be construed as meaning that it is of no importance. However, it must be borne in mind that, under certain conditions, the loss occasioned by the disorder is very considerable, and further that the variety chiefly concerned, Granny Smith, is an important export one.

The fertilizer experiments on both bearing and non-bearing trees have been continued, and although certain apparent differences have been noted, it would be unwise to draw any definite conclusions at this stage, and indeed it is not anticipated that concrete results will be forthcoming for at least two or three years.

In connection with the winter cover crop experiments, one of the greatest difficulties encountered is the unevenness of growth which has been noted in almost every instance. This makes experimental data rather difficult to interpret, and at the same time indicates that there are some more or less obscure problems to be faced, apart altogether from the question of cover crop varieties. Work is proceeding along the lines suggested as important by the results to date.

Major element deficiencies have been studied through the medium of pot cultures, and the trees grown under these controlled conditions are furnishing valuable data for the officers concerned.

The disorder of Santa Rosa plums which manifests itself in gumming of the branches and main stems has been the subject of experiments designed to show whether or not the trouble is caused by some plant food deficiency. A number of elements have been tested, particularly by the use of the injection technique, but so far no positive results have been obtained.

Work on wither tip of apples has yielded quite valuable results, and there appears to be no doubt that this trouble is due to a deficiency of copper. The data obtained this year have not yet been statistically anaysed, so that, at the moment, it is not possible to make any definite assertions as to the most efficient methods of overcoming this trouble. However, a cursory glance at the figures suggests that the results obtained may allow of definite recommendations being made in the near future. As with other deficiency troubles, the problem of the duration of the effectiveness of any one treatment has still to be faced.

With the completion of the more active work on the zinc and copper deficiencies it will now be possible to devote more time to the basic problems of soil management. It is felt that these soil management problems now constitute the most pressing horticultural research problems in the Stanthorpe district, and that before really satisfactory work can be done in other directions, it is necessary to have a sound knowledge of soil management as a foundation on which to build. Accordingly, the work in the Stanthorpe district is being directed to this end as expeditiously as is practicable.

BANANAS.

The work on banana cultural problems has been furthered by the establishment of a fertilizer experiment at Buderim Mountain. In this experimental plot, which is on land that has been under cultivation for upwards of half a century, the design is such that information should be forthcoming on nitrogen, phosphoric acid, and potash as single elements and in the four possible combinations. The planting was made in December, 1938, so that no fruit has yet been harvested, but the plantation is in excellent condition, and there is every reason to believe that sound information will be forthcoming from it.

A considerable number of root surveys have also been carried out with a view to enabling a more intelligent approach to soil management problems being undertaken, and also to determine certain factors concerned with fertilizer placement.

CITRUS.

The citrus fertilizer experiment was commenced early in the 1938-39 year at Mapleton, on trees which might normally be expected to be in full bearing, but which were in fact somewhat decadent. The first crop following the application, which will be harvested in the spring of 1939, cannot, of course, be expected to give any data on the effects of the fertilizer, as it was applied after the crop was formed. In laying down this experiment it was assumed from other results that nitrogen was a definite requirement, and consequently this element was given to all the trees.

The foliocellosis experiment which is being carried out at Gayndah was resumed, and following another application of zinc sulphate as a spray, the trees are in excellent general condition, and it is anticipated that when the next crop is harvested it may be possible to claim positive and economic results.

The soil moisture work was continued at Gayndah.

During the last three months of the departmental year a survey of the physiological disorders affecting citrus fruits, with particular attention to the condition known as woody quarter, has been in progress. This malady in previous years has caused some concern to growers in several districts, but this year it is so rare that it is quite impracticable to carry out any investigational work on the trouble. Undoubtedly the most important apparently physiological trouble in citrus is the gumming of lemons, and following preliminary work the section is now in a position to formulate some plans for an investigation of this problem.

Malformation of mandarin fruit, which is accompanied frequently by a light setting of the crop, is also an important trouble, and consequently work thereon is included in the citrus investigational programme.

Drying out of orange fruits, which appears to be somewhat akin to the "granulation" of other States and countries, like woody quarter of mandarins, has been practically absent during the 1938-39 departmental year, so that at present there is no active work on that problem.

PAPAW.

At the Bureau of Tropical Agriculture at South Johnstone, and at Nambour, progress has been made with studies of the papaw during the past twelve months. A large number of successful crosses has been made, and it is understood that seed production has been quite satisfactory at South Johnstone. A valuable set of data concerning fruit types has been obtained, and success has been achieved in producing seed desired for the propagation of types regarded as being of potential value. A strain of solo papaw, introduced from Hawaii and grown at Nambour, has been rather disappointing in so far as the type of fruit produced is concerned, and although its eating quality is quite satisfactory, the corrugated, poorly shaped fruit will never be of much value, and the chief interest in this strain will lie in its progeny through crosses with other varieties. The Betty variety, introduced from Florida, has produced a satisfactory crop of excellently shaped fruit with good rind characters, but so far there has been no mature fruit from this variety on which to judge its eating or culinary qualities. It is believed, however, that the Betty variety will prove to be a valuable addition to dioecious types in Queensland. The Singalese variety from Ceylon did not produce a very good type of plant, but this may have been due to the environmental conditions; and the fruit, which is still immature, appears to have a number of desirable characteristics. Of the local selections made, the one designated Nambour No. 1 has so far produced several trees which have yielded good type fruit of fine quality, though not of ideal texture.

From time to time, visits have been made to large papaw plantations on the near North Coast, and several selections have been made therein. A point most forcibly brought to notice in these surveys is the heterogeneity characteristic of every plantation, and the number of poor type papaws which originate from what is claimed to be superior seed.

There is no doubt that the first problem to be solved in connection with papaw culture is that of the production of desirable types, and the work for the 1939-40 departmental year is largely along such lines.

Work on asexual propagation has been continued, and has met with a large measure of success. Sections of unions show that there is no necessity for the cambium tissues of stock and scion to be adjacent at the time of budding, as secondary meristems are very quickly set up. An important problem in asexual propagation is constituted by the fact that the production of sap is so prolific that bleeding is profuse, and in the soft tissues of the papaw fungal and bacterial rots are consequently a menace. The problem of asexual propagation, therefore, is largely one of overcoming these bacterial and other rots either directly or indirectly.

As a number of fixed types are now available, a papaw field observation plot will be planted out early next spring in order to make comparisons of the field behaviour of the definite types. In addition to this, it is hoped to be in a position within the next six months to conduct a fertilizer trial, some of the essential preliminary information for which has been obtained from pot culture work done at South Johnstone.

MANGO.

Mango work at South Johnstone, of which an officer of the Fruit Branch is in charge, has been advanced considerably. Success has been achieved with grafting trials and there are now sufficient trees to warrant the initiation of a field trial of varieties. A block of land has accordingly been secured at the Animal Health Station at Oonoonba, near Townsville, which should be quite satisfactory for this purpose and this land is being prepared so that planting may be done in the spring. In addition to this work, further surveys of the mango varieties in North Queensland have been made, and the records contain much valuable data on which to base the selection of desirable types.

AUSTRALIAN NUT.

The Australian nut observational work, recorded last year as being carried out at Buderim, has been continued. During the period under review an attempt was made to discover whether or not the major plant elements, added in large quantities, caused any differences in the size of the nut or in the thickness of the shell. The number of trees available and their disposition did not permit of a sound experimental block being laid out, and this work was regarded as observational rather than truly experimental. The final figures for the past season's crop have been received just recently, and it has not been practicable yet to examine the figures in detail, but, from the evidence so far obtained, there does not appear to be any indication that the main characteristics of any of the strains were appreciably altered by the applications made.

The vegetative propagation work carried out last year did not yield positive results, and it became evident during the spring that the work would have to be repeated and extended. To this end, five strains of nuts were planted at Nambour for the purpose of raising stocks for use in the work. These stocks are progressing satisfactorily, and it is hoped that some at least will be ready for working in the spring of 1939. These stocks include some of the better types selected.

AVOCADO.

Definite progress has been made in work on the avocado. In last year's report mention was made of the introduction of seed of the Mexican and Guatemalan races. Very good germination was obtained of this seed, and during the autumn a considerable number of seedlings were budded with material taken from trees, the performance records of which were known. A number more will be ready for budding in the early spring, and there will then be sufficient trees to lay down an experimental block to test the behaviour of the varieties and their stock-scion relationships. Several growers have offered land for this purpose under highly satisfactory conditions, and it is anticipated that an efficient field experiment will be practicable in the 1939-40 departmental year.

STRAWBERRY.

The strawberry fertilizer plot, which was conducted at Montville, did not yield a great deal of information with respect to the fertilizers themselves. The plot was, however, of very considerable value, in so far as it demonstrated the great variability in types in the normal strawberry field of this State. It became immediately obvious that before the horticulturist could hope to answer any questions concerning fertilizers on this crop, a great deal of work was necessary along the lines of plant selection. This was at once initiated, and at frequent intervals throughout the year, following the first selection, culling was practised. The great difficulty to be overcome was that there did not appear to be any available description of the main Queensland varieties, Aurie and Phenomenal, and growers generally appeared to be very confused on the matter. Following the selection and vigorous culling, another plot was laid down this year with the selected material. The growth of these plants very quickly demonstrated the value of selection. However, at the present time, there are two very good types of Phenomenal plant, but at the same time these are distinct from one another. The distinction so far is based wholly on the habit of growth, and whether this will be reflected in the yields remains to be seen when the harvesting of the crop is completed. If a marked difference in yield is characteristic then it is feared that again the fertilizer results may be inconclusive. At all events, further work on selection is planned, as well as work on fertilizers. The selection work has demonstrated very forcibly the value of culling plants showing any symptoms of virus diseases.

PASSION FRUIT.

The passion fruit fertilizer experimental plot yielded valuable and interesting data. The analysis thereof showed that vines which received complete dressings of nitrogen, phosphoric acid, and potash gave yields far exceeding those obtained from any other treatment, and statistically the difference was highly significant. Apart altogether from crop yields, the general health of the vines was such that the incomplete fertilizers were quite outclassed by the complete fertilizer in that respect. In so far as fruit setting was concerned, vines which received only nitrogen produced by far the greatest number of fruits, but only a small proportion of these came to maturity. The experiment definitely proved that nitrogen alone, phosphoric acid alone, or these two in combination were of no real value. The question of the value of the combination of nitrogen and potash in comparison with the complete dressing still remains to be answered, and consequently a second experiment was laid down in the late summer of this year to test these two combinations. No results, of course, are available from this experiment as yet.

DATE.

Work on date palms is necessarily very slow, and as outlined in last year's report, palms of different varieties are being raised at the Biloela Research Station. It will be some years before there is anything concrete to report thereon.

W. A. T. SUMMERVILLE,
Senior Research Officer (Horticultural Section).

(6) REPORT OF THE PLANT PATHOLOGICAL SECTION.

ıg the procedure adopted in previous
rief summary is given here of the
ctivities of the Plant Pathological
ring the past twelve months. The
he particular investigator concerned
d with the different projects, which
sake of convenience listed under the
e crop involved.

CEREALS.

he work on cereal diseases, referred
st annual report, has been completed.

pt to obtain further information on
various seed dressings on the inci-
smut yielded disappointing results,
owing to a very light infection with this disease, even in plots grown from artificially inoculated seed. In Queensland, the severity of this disease appears to be closely bound up with weather conditions, and in some seasons the disease is practically absent throughout the wheat belt. Further work along these lines will have to be postponed until suitable infected seed is again available.

The absence of a sufficiently high infection also made it impossible to obtain definite results from a varietal resistance trial in which a number of departmental wheat crosses were tested for resistance to flag smut and bunt.

LUCERNE.

Considerable time has been given to a survey of the position with respect to disease in the lucerne crops of South Queensland. The main troubles are witches' broom and a series of root rots.

Witches broom is a virus disease which is now fairly generally distributed, and it may become a serious factor in production in older stands of lucerne. In order to obtain information on the development and spread of this disease, periodic notes were taken in an observation plot established at the Queensland Agricultural High School and College at Lawes. Plans have also been made to test the possibility of mechanical transmission of the disease, a point which apparently has so far received little attention. The possible occurrence of insect vectors is the subject of inquiry by officers of the Entomological Section.

Several distinct types of root trouble are capable of producing a yellowing and death of individual lucerne plants. One of them, occurring in experimental plots at Lawes, is of unknown origin. Two others are due to the well-known organisms *Sclerotium rolfsii* and *Helicobasidium purpureum*, respectively. The former has a fairly extensive distribution and is probably responsible for a definite reduction in stand in some instances. The latter is only known to occur in one farm. Owing to the potential danger of this disease, experiments have been carried out to test the value of soil sterilization for controlling its spread. If these are successful, an attempt will be made to eradicate the disease by means of rotation and soil treatment.

PEANUTS.

The mercurial seed-dressing procedure for preventing germination losses and wilt has been adopted extensively in commercial plantings, with uniformly good results. It is anticipated that by next season practically all Virginia Bunch seed will be thus treated.

Attention is now being given to a survey of the other diseases present in this crop. The more common ones are of a virus nature and of these three distinct types may be recognised. None of these, however, appears to be identical with rosette. At the present time these diseases are responsible for very little loss, but it will be necessary to keep them under observation as any conditions leading to their rapid spread might render them of serious consequence.

TOBACCO.

No experimental work has been carried out with tobacco by this section during the past year, although a number of minor troubles have been investigated. Field trials comparing the different methods available for the control of blue mould have been conducted in co-operation with officers of the Agricultural Branch. It appears that when frog-eye (*Cercospora nicotianæ*) is a factor to be reckoned with, spraying with colloidal copper supplemented by benzol fumigation during excessively wet periods is to be advised. In the southern portion of the State where frog-eye is rarely of importance, the benzol method should take precedence.

A further trial of a number of seedbed cover dressings was instituted in order to correlate previous results with work on mildew prevention recently reported from New Zealand. Final observation will be made on these tests shortly.

BANANA.

No new investigational work has been undertaken in connection with bananas. The attention of the Senior Research Officer has been given to rounding off a number of projects, and summarising the data with a view to placing the information on record by publication.

An extensive bulletin dealing with black end and anthracnose is now in the course of publication.

As a result of a renewed interest in spraying for the control of leaf spot (*Cercospora musæ*), data collected some years ago relating to the influence of weather and seasonal conditions on the development of this disease has become of considerable interest. This information has now been correlated and presented in graphical form, and it is hoped to have it available for publication at an early date.

Several obscure points regarding the distribution and host range of the pathogenic and non-pathogenic strains of *Nigrospora sphærica* still await elucidation, and evidence regarding these has been obtained as opportunity permitted. It is thought that sufficient information will soon be available to satisfy the requirements of the problem, at least from the practical point of view, and consideration will be given to preparing a report on the subject then.

CITRUS.

A considerable amount of experimental work in connection with citrus has been done during the past twelve months. Most attention has been given to the development of the home-made colloidal copper spray for use on citrus. Some modifications in its method of preparation have been evolved, which enable it to be combined with certain of the scalicides in common use. This new formula was tried out last season on brown spot of the Emperor mandarin at Howard, using a fungicide-scalicide mixture at full strengths of all constituents, and successful control of the disease was obtained without any ill effects from the combination.

Fruit from a spraying trial carried out at Howard over the 1936-37 season was harvested in August last, and counts demonstrated the effectiveness of a two-spray schedule of colloidal copper as a control for black spot This spray was equal in efficiency to the standard Bordeaux mixture. Further information on the control of black spot will be available from an experiment at present under way at Woombye. Almost every season serious losses from black spot are sustained where copper sprays are not used. With the proved advantage to be obtained from the colloidal copper schedule these losses should no longer be unavoidable.

A spraying experiment, involving the use of home-made colloidal copper with and without a spreader and at half strength, a proprietary cuprous oxide, and Bordeaux mixture, was laid down at Woombye with the object of comparing the efficiency of these sprays for the control of melanose. Seasonal conditions were such that only a light infection with melanose occurred but comparisons will be possible. However, a moderate infection with black spot will enable results to be obtained with respect to this disease.

Following on the previous year's work, a further trial of the compatibility of colloidal copper and Bordeaux mixture with cyanide fumigation was carried out at Gayndah. Owing to the prevalence of very dry weather during the latter part of the year results were not as precise as could be desired. However, analyses of the spray residue on leaves from the Gayndah plot and from another spraying trial at Woombye threw considerable light on the different results associated with cyaniding after applications of the two copper sprays mentioned.

A further attempt to accurately assess the effect of copper sprays on scale infestation was carried out at Howard, where colloidal copper and Bordeaux sprays were compared in a block of Valencia oranges. Unfortunately, the scale population was very low and results were again inconclusive.

A skin blemish affecting lemons in the Gayndah district was investigated. Field data showed that the disease appeared immediately after two or three days' rain when the fruit was nearly mature. This disease is evidently allied to the rind breakdown of mandarins, referred to in last year's report. The latter was again prevalent following early winter rains.

PINEAPPLE.

Investigations regarding the fruit diseases causing losses at the pineapple canneries were continued. These included brown speck, marbling, and black heart.

Field inoculation trials carried out at Manly with the organism principally responsible for brown speck disease (*Penicillium sp.*) have shown that infection takes place during the flowering stage. Typical lesions are not produced until the fruit is reaching maturity, and they vary greatly in extent in different fruits. There are evidently various factors influencing the post inoculation development of the disease, and an attempt is being made at present to elucidate these in a series of field and laboratory experiments. Both *Penicillium sp.* and *Fusarium sp.* occur in a saprophytic capacity on the plant in the field, and a certain amount of evidence is now available to indicate the means by which penetration into the fruit takes place.

Further field inoculations with the bacteria responsible for marbling disease were carried out with a view to finding some reason for the marked fluctuation in the incidence of the disease. The variation in resistance shown by individual fruit was not sufficient to account for this fluctuation, and it is considered that conditions obtaining during the flowering stage, when natural infection probably takes place, exert a determining influence. The mere presence of the bacteria on the flowers is not sufficient in itself to ensure infection. Further experiments along these lines are in progress. Artificial inoculation has shown that typical symptoms of marbling can be produced in the Ripley variety of pineapple.

Work on black heart has been mainly concerned with attempts to ascertain what conditions are most conducive to its epidemic development. Shading experiments have shown that insufficient sunlight is evidently a contributing factor. Previous observations on the correlation of serious black heart development with poor quality of the fruit were confirmed. The black heart problem is further discussed in the report on the work of the Plant Physiology Section.

It has been found that following certain weather conditions in the field an appreciable amount of water blister (*Thielaviopsis paradoxa*) originates in growth cracks and case bruises on the side of the fruit, and is not controlled by the standard treatment of the cut stem with benzoic acid. An attempt to eliminate this infection by means of alterations in packing procedure and the total immersion of the fruit in a fungicide was made. Shirlan A.G. at a strength which was toxic to the spores of *T. paradoxa* when used in laboratory tests did not give 100 per cent. control when used on heavily artificially inoculated fruit in the field. It is thought that with a lighter inoculum more favourable results would be obtained, a point on which it is hoped to obtain information next summer.

PAPAW.

Early in the present year an investigation of papaw diseases as a major project was undertaken, and this arrangement will enable much greater attention to be paid to the pathological troubles associated with this crop. A general survey of the position is a first necessity, and is at present being carried out. It would appear that the main subjects for investigation will be dieback and the ripe fruit rots.

Dieback has, fortunately, not been so serious this year as during the corresponding period in the 1937-38 departmental year. Investigations have so far been limited to making field observations on the development of the disease.

Fruit rots continue to be a common source of loss in fruit after it has reached the retailer, and are especially serious in consignments sent to Southern markets. In addition to commencing a survey of the organisms chiefly concerned, a spraying experiment designed to ascertain whether consistent spraying with colloidal copper throughout the growth of the crop will materially affect the incidence of the disease was initiated. This should form a basis for more detailed work next season.

Yellow crinkle continues to be responsible for the loss of odd plants, but did not appear in epidemic form during the past year. As opportunity offers, it is proposed to test the effect of systematic rogueing on the incidence of the disease and also to attempt to ascertain the method of spread. The suspected new virus mentioned in the last annual report has made its appearance again this year, and is being kept under observation.

Through the courtesy of a papaw grower at Manly, observations are being made on the effect of commercial applications at various intervals of sulphur and sulphur-copper carbonate dusts on powdery mildew. This will supplement previous information obtained from small scale departmental experiments.

DECIDUOUS FRUIT.

As a result of exceptionally dry conditions during the ripening of the late varieties, brown rot was practically absent, and results were accordingly negative. Incidentally, the value of an early spray of Bordeaux mixture or lime sulphur for the control of leaf curl in peach and nectarine was demonstrated.

Bacterial spot of plums was serious in susceptible varieties when spraying had been neglected or inefficiently done. On the other hand, where departmental recommendations had been carried out a pleasing freedom from the disease was to be noted.

STRAWBERRIES.

A brief survey of the position with respect to the incidence of virus diseases in the strawberry crop was made. Yellow edge and crinkle were prevalent on the South Coast, the former predominating. Very little crinkle was found on the North Coast, though yellow edge was fairly common. Correct diagnosis was rendered difficult by the presence of a number of abnormalities resulting from climatic and cultural factors. It is thought that under the conditions pertaining in Queensland neither of these virus diseases need become serious, provided adequate attention is given to rogueing and to the selection of healthy mother plants.

A previously unrecorded fruit spot was investigated, and it was ascertained that the fungus *Diplocarpon earliana* was the cause. The fruit spot and typical leaf scorch symptoms were reproduced by inoculation.

TOMATOES.

Main projects have included a comparison of the various fungicides used on tomatoes, and work on Fusarium wilt and bacterial wilt.

In connection with the fungicide investigations, spraying trials were carried out in the Rochedale, Manly, and Redland Bay areas. The disease incidence was on the whole light, but information on several points of interest was obtained.

In a comparison of Bordeaux sprays prepared with different proportions of lime, the 4-8-40 mixture did not show any better adherence of the copper on the leaves than either the 4-4-40 or 4-2-40 mixtures. Irish blight (*P. infestans*) was controlled equally well by all three.

Home-made colloidal copper when compared with Bordeaux mixture proved to be as efficient a fungicide and did not appear to have as adverse an effect on yield as the latter spray.

With regard to the two types of dust, copper carbonate-kaolin and copper sulphate-hydrated lime, the former apparently does not affect the growth of the plants as much as the latter, thus resulting in a slightly higher yield of fruit. On the other hand the sulphate dust appears to be slightly more efficient in the control of target spot (*A. solani*) on the fruit.

The application of copper fungicides in the form of wet sprays was compared with their application as dusts. The sprays showed superior adhesion to the leaf and a slight superiority in the control of target spot (*A. solani*). The dusts resulted in yields superior to Bordeaux mixture but inferior to colloidal copper.

The testing of different varieties against various strains of the Fusarium wilt fungus (*F. lycopersici*) has been continued. The outstanding variety as regards resistance to wilt has, so far, proved to be Rutgers. In addition, some of last year's selections have been compared with the original stock, using two of the most virulent strains of the fungus as a source of infection. Consistent improvement was manifested in some cases and variability in others.

On two farms heavily infected with bacterial wilt an attempt was made to control this disease by soil treatments with sulphur. No commercial control was effected, though the development of the wilt in the treated plots was delayed some seven to ten days. The control depends on increasing the soil acidity to a point inimical to the growth of the parasite, and then reducing the acidity again with lime before planting. It is thought that with the conditions occurring during the experiment the period at which the soil was subjected to the high acidity was not sufficiently long, and the experiment is being repeated, using a much earlier application of sulphur. Cold weather and abnormal rains during last winter were responsible for conditions detrimental to normal growth, and a considerable amount of root rot, with which *Rhizoctonia* and other organisms were associated, was an indirect result.

Verticillium wilt has proved to be more common than was previously thought to be the case.

VEGETABLES.

A project to control pumpkin stem rot (*Fusarium* sp.) by means of liming infected soil had to be abandoned through the failure to obtain a suitable location for the experiment. However, field observations suggested that where liming had been practised and abnormal acidity corrected a reduction in the disease occurred. This disease has been recorded also from watermelons and marrows.

Onion smut (*Urocystis cepulæ*) was recorded for the first time during the past year.

FORESTRY.

Investigations in connection with fused needle have been continued and elaborated. Further confirmation has been obtained of the beneficial results of dressings of phosphatic fertilizers, and in some of the plots there is now a complete recovery from the fused needle condition. The effect of applying various other forms of fertilizer has also been investigated. The nutritional origin of fused needle is considered to be definitely established.

A number of seedlings have been raised from fused needle-affected parent plants with the object of determning whether there is an inherited susceptibility to this disease. All these seedlings were of an abnormal colour at germination, but developed normally thereafter. Cuttings from diseased and healthy plants are being propagated with the same object in view.

An experiment was instituted at the Gadgarra nursery, in North Queensland, to determine whether maple gall could be controlled by any of several different seedbed treatments. Owing to heavy rains in North Queensland at the time of seed sowing, results were entirely negative and the experiment will have to be repeated.

Observations carried out in North Queensland on root rot (*Fomes pachyphloeus*) in maple, kauri pine and hoop pine, have indicated that the incidence of the disease decreases when the stumps of rain forest trees, left after the burn, reach an advanced state of decay. At this stage it appears that the organism responsible for the rot loses a considerable amount of its activity.

Two forms of chlorosis in hoop pine seedlings have been investigated during the year. A lime induced chlorosis occurred in two nurseries. In one case, this was traced to the alkaline nature of the water available for watering purposes. The application of sulphur proved effective as a temporary remedial measure for use until the nursery can be removed to a more favourable site. In the second case, the alkalinity was due to the upward movement of soil salts under conditions of high evaporation, low rainfall, and frequent light waterings. A control was effected by leaching the soil with heavy watering.

The other type of chlorosis was due to a deficiency of nitrogen brought about by the use of a sawdust cover for the seedbed. The organisms responsible for the breakdown of the cellulose used all available nitrate at the expense of the plant. A dressing of ammonium sulphate remedied this effect.

An experiment was carried out at Yarraman to compare the efficiency of the fungus isolated from hoop pine mycorrhiza and *Boletus granulatus*, as regards mycorrhiza formation in hoop pine. No difference was obtained in any of the plots including naturally infected soil, and it is considered that the mycorrhizal fungus of hoop pine is probably closely allied to. if not identical, with *B. granulatus*.. It is of interest to note that the typical *B. granulatus* mycorrhiza on *Pinus* is ectotrophic while on *Araucaria* it is entotrophic.

A fungus has now been isolated from the mycorrhiza of *Pinus taeda* plants obtained from their natural habitat in the United States. It is proposed to see if there is any significant response to inoculation with this fungus, as compared with the mycorrhiza formers naturally present in Queensland.

It was shown, experimentally, that the timber used in the construction of the cases used as egg containers, even when badly sap-stained, did not influence the deterioration of the eggs due to mould rots. Treatment of eggs with Shirlan A.G. showed that the initial contamination in the majority of instances was on the shell of the egg itself.

GENERAL.

During the past year there has been a considerable call for cultures for the inoculation of legumes, chiefly lucerne and soya bean. For the two crops mentioned, proved cultures are available. In other cases cultures have been supplied from stock received from America.

J. H. SIMMONDS,
Senior Research Officer (Plant Pathological Section).

(7) REPORT OF THE PLANT PHYSIOLOGY SECTION.

During 1938-39, the activities of the Plant Physiology Section have been chiefly directed towards continuing the programme of research into pineapple problems, which was made possible largely as a result of financial contributions from growers, canners, and other interested bodies. It was indicated in last year's annual report that the pineapple programme which had been adopted included three main lines of investigation, namely—(1) Cultural studies, including work on nutritional and soil problems; (2) Plant selection studies; (3) Studies on fruit quality in relation to disease incidence. During the past year, however, it became apparent that the purely pathological aspects of the fruit disease studies were assuming greater importance than had been anticipated when the original programme was drawn up. Accordingly, it was decided that the whole of the disease problems associated with pineapples should be investigated by the Plant Pathological Section.

As the work on pineapple plant selection has, since its inception, been carried out at Nambour by an officer of the Horticultural Section, the staff of the Plant Physiology Section is now solely engaged on nutritional and soils investigations. However, the relegation of the pathological and plant selection projects of the pineapple research programme to their proper investigational units within the Division of Plant Industry (Research) has been effected without any curtailment or modification of the programme as originally drawn up. Frequent consultations with the senior research officers in charge of the Plant Pathological and Horticultural Sections of the Division, and with the officers in these sections actively engaged on the investigations, as well as with the Director of Fruit Culture, ensure the maximum degree of co-ordination between the various lines of inquiry.

Some attention is being given to the physiological and soils problems affecting—(1) the cultivation of papaws in the metropolitan area, and (2) the production of winter fodder crops in pastoral districts on the Darling Downs. As in the case of the pineapple investigations, the programme of work which has been initiated in connection with papaw-growing has been made possible largely through the financial support of the growers themselves.

Pineapple Production During 1938-39.

The production of pineapples in Queensland during the past twelve months has shown a marked increase over that for the corresponding period in 1937-38. While local and interstate fresh fruit markets have provided an outlet for some of this increased production, the greater part of it has been available for canning. Consequently, a comparison of the quantities of fruit which were handled by the canning factories during the past two years indicates the extent to which production has been increased. Expressed in terms of one and one-half bushel cases, these quantities are as follows:—

Year.	Winter Crop.	Summer Crop.	Total.
1938-39	331,835	429,656	761,491
1937-38	119,095	357,515	476,610
Increase during 1938-39 over 1937-38—	212,740	72,141	284,881
Percentage increase—	178·6	20·2	59·8

Although the 1939 summer cannery crop constituted a record, being 20.2 per cent. in excess of the previous summer's crop, which was also of record proportions, the margin between these two crops would probably have been far greater had it not been for the very dry conditions which obtained in all the main producing centres until the latter part of February, by which time the bulk of the summer crop was approaching maturity. In consequence, the average size of the individual fruits was considerably smaller than it was during the previous summer crop.

Another factor contributing to the smaller average size of the fruit in the 1939 summer crop was the cutting down in the use of fertilizer during the previous spring, consequent on a big reduction in the price being paid for pineapples for canning. The full effects of this factor are difficult to estimate, since the extent to which expenditure on fertilizer was curtailed varied greatly between individual growers. Observations made prior to and during the harvesting of the crop suggest that growers who maintained their fertilizer applications at the rates recommended by this Department were more than compensated for their outlay by the heavier yields which resulted, because of the larger average size of the fruit harvested. However, in these instances the advantages accruing from the use of adequate fertilizer are likely to become accentuated in the succeeding crop, owing to the stimulus given to the sucker growths.

Pineapple Field Demonstration Plots.

From 1936-38 the field work undertaken by this Department in connection with the pineapple investigational programme was largely directed at disseminating data obtained from previous investigations regarding the cultural practices best suited for this crop under Queensland conditions. The greater part of this field work has taken the form of a series of demonstration plots, each approximately one-third of an acre in extent, of which a total of thirty-two are now located in various parts of the State. The layout of these plots and the objectives sought have been summarised in the last two annual reports. That they are fulfilling the purposes for which they were laid down is indicated by the increasing production and a general improvement in fruit size and quality.

During the past year, two additional demonstration plots have been laid down, one at Buderim and one at Nikenbah, but two of the earlier ones have been discontinued. In spite of abnormal seasonal conditions—viz., exceptionally heavy late rains during the latter part of May, 1938, and prolonged dry conditions during the early part of last summer, growth on the plots has generally been good. However, two plots planted in 1936 which are located on re-plant land in the Nambour and Buderim districts, respectively, have proved most disappointing, large areas in each having collapsed with wilt. Investigation has shown that these failures can be correlated with soil conditions, particularly with the ratio between field moisture capacity and wilting co-efficient. Work which has been carried out on the significance of these factors in assessing the suitability of a soil for pineapple culture is discussed in another section of this report. The failure of the Buderim plot was apparently due to the abnormally high wilting co-efficient of the soil, 22 per cent., coupled with prolonged dry periods, and it has strikingly demonstrated that colour, depth, texture, or the apparent fertility of a soil as measured by chemical analysis, are unreliable indicators of the suitability of a soil for pineapple-growing when considered apart from soil-moisture relationships. Paper mulch was not used on the plot which was laid down at Buderim in 1936, when only very small quantities of the material were available. Results obtained from the use of paper mulch on demonstration plots laid down in 1937 in other districts have suggested that the employment of this method of soil moisture conservation on Buderim soils might go a long way towards overcoming their inherent high-wilting co-efficient. Accordingly, a second plot was laid down in this district in November, 1938, which incorporated both mulched and unmulched areas for comparative purposes. The progress of this plot to date has been most satisfactory, in that growth differences between the mulched and unmulched portions are already well marked.

Harvesting of the plant crop of all ten of the demonstration plots laid down in November-December, 1936, was completed during the past year, and, in addition, varying percentages of the plants in most of the paper mulch plots laid down at the end of 1937 also fruited during the past summer. Of the 1936 plots, the one which gave the heaviest yield was located on a property at Woombye. This plot was planted on 2nd December, 1936; no paper mulch was used, and 2,232 plants which had been propagated from large-sized slips were treated with acetylene on 18th October, 1937. Between 21st February and 30th October, 1938, a total of 2,143 fruits were harvested from these plants, aggregating 10,099 lb. and averaging 4 lb. 11.4 oz. per fruit with the tops on. The peak harvest period was from the middle of April to the middle of May, 1938, and 68.5 per cent. of the plant crop matured between 9th March and 13th June. As this planting was made at the rate of 15,660 plants per acre the yield, calculated on an acreage basis, was 31 tons 12 cwt. It is anticipated that harvesting of the second crop, or first ratoon, from this plot will be completed by 31st October, 1939, and present indications are that the rate of yield will closely approximate that obtained for the plant crop. None of the plant crop yields from the other demonstration plots laid down in 1936 were at a lower rate than 20 tons per acre, with the exception of the two noted above and one at Palmwoods. Smoke from a grass fire on an adjoining field caused many of the plants in the last-named plot to flower prematurely, shortly after planting, and this resulted in a much lower plant crop yield being obtained than would otherwise have been the case.

The paper mulch demonstration plots which were laid down in 1937 exhibit differences in growth from district to district, according to variations in soil type and climatic influences, but in all cases they compare very favourably with the best plantings of similar age in their respective districts. In this connection, attention again may be drawn to the fact that all except one of the plots which were laid down in South Queensland in 1937 were located on land which had carried one or more plantings of pineapples previously. The use of paper mulch has shown to particular advantage on soils known to possess a low moisture equivalent-wilting point ratio, *e.g.*, Beerburrum soils. In this district four double rows of one of the 1936 plots were planted in paper mulch and the contrast between these rows and the adjoining "no mulch" planting, though always marked, has become greatly accentuated since the harvesting of the plant crop was completed. Wilt has developed in several places in the "no mulch" planting, but it has not yet made its appearance in the mulched rows. The latter, moreover, have suckered well and the growth of the suckers is, generally, most satisfactory.

PINEAPPLE FERTILITY TRIALS.

The major experimental project undertaken during the year under review has been the establishment of a comprehensive series of pineapple fertility trials at Glasshouse Mountains. The scope of these trials embraces, in some degree, the various lines of research being pursued individually by all officers attached to the Plant Physiology Section, as well as certain aspects of pineapple fruit disease problems. Primarily, the trials are based on the need for more precise information regarding the fertilizer requirements of pineapples under local conditions. The trials have been planned in such a way that the results, when correlated with soil and climatological data, should be applicable in some degree to any part of the coastal belt of the State. Specifically, attention is being directed towards the elucidation of the following points bearing on the fertilizing of pineapples:—

(1) The relative proportions in which the essential mineral plant foods should be present in a soil in order to obtain maximum results.

(2) The percentage increases in yield which result from additional increments of fertilizer when applied either singly or in combination.

(3) The depression in yield, if any, which results when nitrogen, phosphoric acid, or potash is applied in excess.

(4) The economic limits to which fertilizers may be applied in relation to the price obtained for the product.

(5) The degree of accuracy with which the fertilizer requirements of a given pineapple soil may be determined by mathematical calculations based on data derived from chemical analyses.

(6) The effect of varying proportions and amounts of the several fertilizer ingredients on fruit quality, on the incidence of fruit diseases and blemishes, and on the period of ripening.

(7) The influence, if any, of various fertilizer treatments on the carrying and keeping qualities of the fruit.

The trial area extends over one and one-half acres of second cycle land of the Glasshouse sandy loam, and the layout consists of eighty randomised plots incorporating sixteen different fertilizer treatments, each replicated five times. Prior to planting, intensive soil sampling of the area was carried out so that analytical data would be available regarding variations in the chemical and physical constitution of the soil from plot to plot. It was found that such variations as existed were of a very minor character only. Other soils investigations which are being carried out in connection with these trials are outlined in a subsequent section of this report.

Planting was carried out between the 1st and 10th of November, 1938. All planting material used was individually weighed prior to stripping and graded accordingly. Fertilizing of the plots has been carried out according to a pre-determined schedule, and five applications have been given to date. The fertilizing technique involves the use of calibrated measures, each plant receiving a fixed quantity at each application. Growth differences are already apparent throughout practically the whole of the series of treatments. These differences are most pronounced in the treatments involving low levels of nitrogen, but they are also noticeable in the potash series, and, to a lesser extent, in the phosphoric acid series. A large number of leaf measurements have been made and these show that differences of up to half an inch occur in the average width of leaves in different treatments. It is anticipated that a considerable proportion of the plants in these trials will flower next September and October, so that some data on the plant crop should be available during the coming year. However, it is proposed to continue the experiments over a cycle of three crops, *i.e.*, four and one-half years.

Pineapple Soils Investigations.

Soils investigations having special reference to pineapple culture have formed a major part of the laboratory work which has been carried out by this section during 1938-39. The information obtained from this and the previous survey of the Beerburrum-Glasshouse Mountains-Beerwah area has proved of great practical value in the interpretation of specific soil problems, since the large area covered by the surveys includes a wide range of soil types which are all being used for the same purpose, viz., pineapple-growing. Not only have the soil surveys shown the close relationship which exists between soil type, *i.e.*, physical characteristics, and economic production, but they have also revealed that only in a very few instances in the districts surveyed is there a significant difference in the available nitrogen, phosphoric acid and potash content of soils, which, as experience has shown, vary considerably in productivity when planted to pineapples.

Of the purely physical properties of a soil, its moisture relationships rank as among the most important and *a priori* considerations suggest that a knowledge of these relationships for varying soil types should provide a basis for comparing their crop-producing potentialities. Accordingly, an intensive study of the soil-moisture relationships obtaining in several distinct soil types has been undertaken with a view to securing data which might be related to crop production. For several months past, soil samples from selected areas have been taken for moisture determinations at regular fortnightly intervals. In addition, the wilting co-efficients of these soils have been determined. The data so obtained has made it possible to correlate fluctuations in soil moisture with the moisture equivalent, or field moisture capacity, and with climatic data calculated in terms of monthly rainfall-evaporation ratios, and thus provide a means of postulating both the percentage of the soil moisture which is available to the growing crop and the period for which it is available. Previously noted variations in the relative crop-producing capacities of such soils as the Glasshouse sandy loam, Beerburrum fine sand, and the Buderim loam, when subjected to comparable fertilizing and cultural treatment, can now be satisfactorily explained on this basis. As rapidly as circumstances permit, data on moisture relationships is being obtained from soils in other areas, with the object of ascertaining the period of the year during which the moisture content of these soils is at or near the wilting co-efficient. As little or no moisture is available for crop requirements at this point it is evident that such data provides a measure of the suitability or otherwise of a soil for pineapple culture, quite apart from considerations of chemical fertility. In addition, it gives an indication as to the probable benefits which will accrue from the employment of moisture-conserving practices, such as the use of paper mulch. Obviously, however, data of this character is applicable not merely to a semi-permanent crop such as pineapples but to all other crop plants, whether annual or perennial. On Buderim Mountain, for instance, annual crops having a short growing period which coincides with the rainy season may be relied upon to give satisfactory yields in any but a very abnormal season, whereas those with a longer growth cycle, particularly shallow-rooted plants such as the pineapple, frequently may have to contend with periods when the available soil moisture is insufficient for their full requirements.

Elucidation of the role played by certain soil factors in crop production forms an important part of the pineapple fertility trials which have been laid down at Glasshouse Mountains. These trials, as already mentioned, consist of eighty plots and, prior to planting, a composite soil sample from each alternate plot was subjected to chemical analysis to determine the degree of uniformity which existed over the area. Since planting, similar analyses have been made on samples taken at six-weekly intervals from fifteen type locations scattered throughout the area. This has made it possible to keep a record of the fluctuations occurring in the available nitrogen, phosphoric acid, and potash content of the soil. Soil moisture determinations have been made regularly at fortnightly intervals since planting these plots, for the purpose of comparing the moisture content under paper mulch with that in exposed soil. It has been found from these studies that, following the commencement of the summer rains, a period of five weeks elapsed before the soil under the middle of the mulch strips reached its moisture equivalent.

FIELD EXPERIMENTS ON CROOKNECK DISEASE.

During the past year field experiments on the deficiency disease of young pineapple plants known as sclerosis or crookneck have been continued on a plantation at Elimbah. The symptoms of this disease were briefly described in the last annual report. Previous experiments showed that while periodical spraying with boracic acid reduced the incidence of the disease it did not entirely prevent its appearance. During November, 1938, further trials were laid down for the purpose of testing the effect of applications of zinc to the growing plants following on a test planting of maize, which indicated that the soil was deficient in this element. In these trials zinc sulphate was applied in two ways—(1) as the crystalline salt mixed with fertilizer, and (2) in the form of a spray. Responses have been obtained with both methods of application, but those resulting from the application of the dry salt mixed with fertilizer have proved markedly superior to those obtained from spraying. In this connection it should be noted that one factor which appears to have an important bearing on the relative efficacy of the dry and spray zinc treatments for the prevention of crookneck appears to be the time of application in relation to the age of the plant. Dry zinc sulphate was applied with the fertilizer within three weeks of planting, while plants of the same age had not reached a sufficiently advanced stage of growth to permit of spraying until they were two and one-half months old. Despite the fact that these plants received additional applications of zinc spray at approximately monthly intervals thereafter, the treatment has not entirely prevented the appearance of crookneck symptoms, as was the case where crystalline zinc sulphate was incorporated in the first application of fertilizer. Leaves which have developed since the spray treatment was commenced, however, do not exhibit sclerotic symptoms on the sprayed plants to the same extent as they do on plants in the neighbouring check rows. Application of zinc sulphate with fertilizer shortly after planting has not only prevented the development of the typical sclerotic symptoms, but has also effected a marked improvement in both the colour and general vigour of the plants.

WATER BLISTER DISEASE INVESTIGATIONS.

For several years past, the disease of pineapple fruits known as soft rot or water blister has caused heavy and progressively increasing wastage in fruit consigned to the Sydney and Melbourne markets during the summer months. Coupled with the assertion that the measures which have been recommended for the control of this disease are no longer effective, varied and conflicting opinions have been advanced regarding the reasons for its increasing severity. In response to requests from growers' organisations, an investigation of the factors involved in the development of water blister in pineapples while in transit to interstate markets was undertaken in Sydney and Melbourne during February and March last. The main point brought to light in the course of these investigations was that the serious increases in losses from water blister which have occurred in recent years appear to have resulted from a proportionate increase in the percentage of side or skin infections as compared with stem-end infections. At the time that the previous investigations on this disease were carried out during the years 1928-1930, it was estimated that the latter type of infection accounted for 75 per cent. of the total wastage from the disease. Observations made during the past summer indicate that the position is now reversed. In seven experimental consignments, aggregating 3,629 fruits, which were examined in either Sydney or Melbourne, only one stem-end infection occurred, compared with a total of 921 side infections in all treatments. Thus it is clearly indicated that dusting the cut stem-ends of pineapple fruits with a fungicidal substance, such as a mixture of benzoic acid and kaolin, no longer provides an adequate safeguard against losses from water blister. It has been found that the extent to which side infections may occur varies with (1) the degree of contamination of the fruit with the spores of the causal fungus, and (2) the degree of care exercised in picking and packing.

Contamination of the fruit with the spores of the causal fungus during transit to the markets was not found to increase the incidence of the disease in fruit examined up to eight days from the time of picking. It was further found that, without resort to any protective measures other than care in picking and packing, the incidence of water blister could be reduced to under 2 per cent. at times when artificially surface-contaminated fruit was showing wastage of from 90 per cent. to 97 per cent. Experiments directed towards evolving a means of protecting fruits from side or skin infections were instituted at the conclusion of the Sydney and Melbourne investigations. Because of decreasing seasonal temperatures it was found necessary to discontinue these experiments before any degree of finality had been reached. The work has advanced sufficiently, however, to indicate that the problem of obtaining complete control of water blister is complicated by (1) the limitations which Public Health legislation necessarily imposes on the range of fungicidal substances which might be used for the purpose, and (2) the difficulties involved in getting any fungicidal substance to adhere to the fruit so as to provide a protective covering over the whole of its surface. Up to the present, the most promising results have been obtained by immersing the fruit within two hours of picking in an aqueous suspension of a proprietary compound known as Shirlan A.G., but so far this method has failed to give 100 per cent. control. Even if treatment of the fruit in this way were found to be effective, however, there are practical and possibly economic difficulties involved in its use which might render it unacceptable. A line of investigation which has not yet been taken up is that of fumigation. Here again, however, limitation in the choice of fumigants is likely to prove a handicap.

Field Trials with Sulphate of Iron Spray.

Last year, in discussing field trials with sulphate of iron spray for pineapples, it was stated that evidence had accumulated to show that iron deficiency greatly increases susceptibility to wilt. Further evidence in support of this conclusion, some of it of a very striking character, has been obtained during the past twelve months. Five rows of a demonstration plot at Amamoor, which was planted in 1936 on a soil possessing a reaction of between pH 6 and pH 7, have been sprayed with iron sulphate solution at regular monthly intervals throughout the year. A recent inspection of this plot disclosed that wilt has recently developed in several parts of the unsprayed sections of the plot, and while it extends in one place right up to one of the outer sprayed rows, the latter are entirely unaffected. Similar, though somewhat less striking, instances of wilt prevention through the regular application of iron sulphate spray have been noted at Moggill and Manly.

Spraying of pineapple plants with iron sulphate spray is of proved benefit, quite apart from wilt prevention, wherever the mean soil reaction lies above pH 5.4. Under such conditions regular monthly spraying promotes both the rate and vigour of growth and increases production. Wholly or in part, all of the pineapple demonstration plots which are located in the Mary Valley receive regular monthly applications of the spray, and the same applies to the plots located at Moggill and Manly. The results which have been achieved are ample justification for the time and expense which have been involved, but growers in the districts mentioned have, in general, been slow to follow the lead which has been given them.

Black Heart Investigations.

Despite intensive investigation, no completely satisfactory explanation of the causal factors underlying the physiological disorder of pineapple fruits known as black heart has been obtained. As yet, it is not even possible to state, with any degree of certainty, the conditions predisposing to black heart.

As previously reported, the occurrence of black heart is closely connected with the carbohydrate metabolism of the plant, but the actual nature of this connection is still obscure. Considerable experimental work has been carried out on this point. Shading plants for a month before picking the fruit increased the incidence of black heart, but complete defoliation of plants four to six weeks before the fruit matured did not have this effect. The amount of sunlight available to the plant appears to be one of the chief factors conditioning the development of black heart, and it has been generally observed that fruit grown on slopes with a southerly aspect are more often affected than those picked from northerly slopes. Similarly, it has frequently been noted that fruit from the northern side of a double row is less affected with black heart than that from the southern side. There is also some evidence that unduly close planting, by cutting down the illumination of the foliage, may increase the incidence of black heart. Field observations suggest that the immoderate use of sulphate of ammonia during the autumn months predisposes to black heart.

Winter fruit which was stored in a refrigerator at about 50 deg. F. developed a certain amount of black heart, but no severe cases were produced in this way. Removal of the tops from the fruit prior to refrigeration had no apparent effect. Fruit picked in the early stages of ripening was affected to a greater extent than either immature or fully ripe fruit.

As previously reported, black heart very definitely tends to occur in fruit with whitish, opaque flesh rather than in those with translucent flesh. Since a high degree of flesh translucence is desired in canning, the type of fruit which is most subject to black heart is one which is of inferior canning quality because, in addition to poor flesh colour and lack of translucence, it is generally low in sugar. Because of climatic influences, this latter type of fruit occurs to a much greater extent in the winter months than in the summer.

Brown Speck and Marbling Diseases.

The pathological aspects of investigations on brown speck and marbling diseases of pineapple fruits are discussed in the report of the Plant Pathology Section. It has not been possible to establish any correlation between fruit quality and the incidence of the brown speck disease, but in the case of the bacterial disease known as marbling, evidence has been obtained to show that superior quality fruit, *i.e.*, fruit possessing a high degree of translucence coupled with a high sugar content, is less susceptible to the disease than poor quality fruit.

Plant Selection Studies.

Work on pineapple plant selection, at Nambour, in accordance with the programme which was drawn up two years ago, and which was briefly outlined in last year's annual report has been continued. As work of this character is necessarily slow, involving as it does careful observation of large numbers of plants through several successive generations before any degree of finality can be reached, there is little that can be added at this stage to what has already been reported. During the past year, the number of clonal and mass selection plantings which have been under observation has been extended. The former have been planted chiefly in the grounds of the Nambour office of this Department, while the latter are located on various farms throughout the neighbouring districts. Some of the original clonal plantings fruited during the past summer, and from among these several of the most promising have been re-selected for further propagation.

Since work commenced on pineapple plant selection two years ago, special attention has been given to the question of abnormal or "off" types. The data obtained in the course of this study has recently been collated and forms the subject of an illustrated advisory article now in course of publication. This article should prove of considerable value to growers and to the industry generally.

Papaw Investigations.

A programme of physico-chemical investigations on papaw soils, similar to those being carried out on pineapple soils, was started during May of this year. These studies are being coupled with exploratory fertilizer and mulch trials on papaw plantations located in the Sunnybank and Moggill districts. Prior to commencing this programme, observations were carried out on the incidence of "fruit drop" in papaws, which was prevalent during the past summer, and it was found that this trouble appears to be related to the question of soil moisture availability.

Soils Investigations in the Tara District.

During the year, a brief reconnaissance survey of the soils of the Tara district, on the Darling Downs, in relation to their suitability for the cultivation of winter fodder crops was made. It was found that a marked variation in soil types existed in this area, particularly in respect of their capacity to conserve subsoil moisture. It is considered that the soil types which possess this latter characteristic in the highest degree are those which are most likely to prove suitable for the production of winter fodder crops, since the maintenance of an adequate supply of soil moisture appears to be the limiting factor for crop growth in this area.

Further investigation is required before any specific system of soil management can be laid down for this area, however, since the soils are generally deficient in phosphoric acid and nitrogen and this deficiency appears to become intensified very rapidly when they are brought under cultivation. In this connection it should be pointed out that fodder grown on a soil deficient in phosphoric acid may be of questionable nutritional value.

Acknowledgments.

Officers of the Fruit Branch have been responsible for carrying out the great bulk of the advisory work relating to pineapple culture during the past year. In addition, however, the task of carrying out most of the field work connected with the experimental and demonstrational programme has fallen on these officers, and it is desired to set on record appreciation of the capable and thorough manner in which they have discharged these duties. Thanks are also due to the Director of Fruit Culture for the manner in which he has co-operated in furthering the investigations herein reported, not only by providing the services of field officers but also by his keen personal interest.

Again during 1938-39 liberal donations of fertilizer for use in pineapple experimental work were received from A.C.F. and Shirley's Fertilizers Ltd., Fertilizer Distributors Ltd., Nitrogen Fertilizers Pty. Ltd., Paton Burns Ltd., and the Committee of Direction of Fruit Marketing. All of this fertilizer was used on the demonstration plots and the generosity of the firms making the donations has assisted very materially in carrying out the large scale extension project represented by these plots.

H. K. LEWCOCK,
Senior Research Officer (Plant Physiology Section).

REPORT OF THE DIRECTOR OF AGRICULTURE.

SEASONAL CONDITIONS.

The winter of 1938 was very favourable for the growth of pastures and all sown crops, particularly in the Southern Division. Dull showery weather was a general experience during the July-August period. September rains, however, were under average in volume, but good seasonal conditions during October and November ensured the establishment of summer crops.

December, hot and dry, was a month of wilting pastures, and arrested crop growth. Excessive heat continued until the third week in January, when storm rains brought welcome relief. A large acreage of early maize and fodder crops which were unlikely to reach maturity, because of seasonal adversity, was used for grazing.

In the far North, heavy seasonal rains early in February caused flooding in many districts. At the same time, beneficial rains extended throughout the central and southern farming regions.

March was a wet month in all districts; consequently, pasture and crop growth was prolific, especially with the late-sown crops. The last quarter of the term was remarkable for excellent farmer's weather. Ample rainfall and mild temperatures, prevailed until late in June, and these conditions ensured abundant grass and a rapid and complete establishment of winter grain and fodder crops. Mid-June rains were the best general falls—over 4 inches in many places—experienced at this period of the year for a very long time.

Notwithstanding the midsummer heat wave, the year was one of the most productive in the history of Queensland, particularly in respect of fodder crops and, as a corollary, returns from the dairy industry.

WHEAT.

In the wheatlands of the Maranoa and Central districts, sowing commenced in April, but elsewhere lack of suitable rains retarded farm operations. Heavy rains occurred in May, when registrations ranged up to 6½ inches, with an average of from 3 to 4 inches all over the Darling Downs. Farmers were thus able to complete their planting programmes with an assurance of sufficient soil moisture until, at least, the end of June.

All crops made excellent growth during July and August, dull weather and frequent showers inducing rapid development. Frost damage was negligible on the Darling Downs, but some early Maranoa sowings were affected so severely as to compel their being cut for hay.

Excellent grazing conditions resulted from the luxuriant early growth of grass and fodders.

Although a seasonal setback was the experience in September, widely distributed rains in October ensured ripe, plump grain in practically every wheat crop, and the resultant harvest was exceptionally heavy.

Storm rains delayed the general harvest at intervals in November, but without any seriously damaging effect, while the quality of grain was better than it had been for several years. The estimated production of 8,500,000 bushels from an area of 450,000 acres, is more than 3,000,000 bushels in excess of the previous record crop from 272,316 acres in 1930-31.

Varieties evolved by the departmental wheat-breeder continue to increase in favour with farmers, the varieties Flora, Three Seas, Seafoam, Cedric, Navo, Puora, and some others, proving so adaptable to Queensland conditions as to induce a definite increase in the annual wheat production of the State. A check of varieties sown by the Wheat Board showed that, of thirty recorded varieties, no fewer than fifteen were evolved by Mr. R. E. Soutter at Roma, prior to their being introduced into general cultivation. The latter varieties represented a sown area of 263,823 acres, or approximately 60 per cent. of the total wheat plantings. Flora, one of the outstanding Queensland wheats, also was grown in New South Wales on 25,000 acres. Considerable progress has thus been made in the evolution of rust-resisting and drought-resisting types suitable for the several grain-growing districts.

The production of slow-maturing types for early sowing as grazing or dual-purpose wheats, as an improvement on Currawa in respect of grain quality and rust-resistance, is among present plant-breeding projects.

Breeding, selection, and observation plots were successfully concluded at several locations on the Darling Downs and in the Maranoa district.

Varietal trials in the Callide and Dawson Valleys, using five promising varieties, resulted in Three Seas producing the best average yield, with 26·7 bushels to the acre.

BARLEY, OATS, AND CANARY SEED.

Returns from barley, oats, and canary seed also were influenced by the favourable season on the Darling Downs, but increase in acreage and production were not so pronounced as with wheat.

MAIZE.

In some localities, very early sowings of maize gave fair returns, but, because of most of the crops tasselling during the December-January heat wave in the southern maize districts, early maize-plantings, generally, proved unprofitable for grain. Fortunately, weather conditions were better for the large acreage sown for the late crop, from which good average returns were obtained. Some excellent crops were harvested in the Mary Valley, Burnett, and Central coastal districts.

On the Atherton Tableland, the exceedingly wet period from mid-January to June was not conducive to the production of superior maize, the quality of the grain, generally, being below that of the previous season.

Pure seed maize improvement work with five varieties was continued in the Mary Valley, Murgon, Lowood, and Kilcoy districts.

SORGHUMS.

Interest in the cultivation of grain sorghum continues to extend, particularly on the Darling Downs, where the dwarf-growing varieties, which are suitable for mechanical harvesting, promise to develop greatly in volume and value.

Limited early sowings grew well after the late January rains, which ended a dry period, during which nearly every maize crop failed. Main plantings, therefore, were unseasonably delayed, and crops, generally, matured late under risk of premature frosting.

In the Central Division, many crops were affected very seriously by yellow peach moth infestation, and others by the depredations of parrots and other grain-eating pests. In the Callide and Dawson Valleys, however, the damage from these causes was less severe.

Sorghum crops in the Darling Downs, Maranoa, Upper Burnett, and South Burnett districts, generally, produced satisfactory results.

An interesting development has occurred on the Darling Downs, where both saccharine and grain sorghums were profitably grazed by sheep. The crops observed revealed an extraordinary stock-carrying capacity—a fact of importance to sheep farmers.

An extensive experiment programme was conducted in the course of the year, including varietal and spacing trials, pure seed increase plots, and pure seed selection. Available seed of four promising dwarf and semi-dwarf varieties is being distributed. When feeding values have been duly appraised, sorghum should be in much stronger demand, and this crop may eventually be substituted for maize to a very large extent in the drier farming regions.

TOBACCO.

The season was notable particularly for a severe outbreak of blue mould, which occurred in all districts. In the chief northern areas, production was maintained largely because of the use of benzol vapour and a general improvement in cultural methods. In southern areas, where blue mould defeated early attempts to raise seedlings, most growers were able to obtain a satisfactory strike from later benzol-protected seed-beds. Tobacco crops in the Mackay and Miriam Vale areas were the most seriously affected with blue mould, which, with excessive rain, resulted in much reduced yields of leaf. At Mareeba and Dimbulah, the best results were obtained from early plantings, continuous heavy rains from mid-January to late March tending, together with an occurrence of blue mould, to retard the growth of later plantings.

Where applied, the results of previous experiment work led to the elimination of yellow patch in seed-beds to a very large extent, and to an extension of improved cultural methods.

Numerous experiments and field trials were again conducted successfully by field officers in co-operation with officers of the Division of Plant Industry (Research).

The total yield of cured leaf for the 1938-39 season has been estimated at 1,816,950 lb., from an aggregate area of 3,863 acres. Values for leaf sold at the April-June sales were well maintained at approximately the previous year's rates, there being a keen demand for all grades of bright leaf.

POTATO.

Favourable conditions ruled for the 1938 spring planting of potatoes. Crops, generally, produced satisfactory returns, although a dry period in September was a retarding factor. The heaviest yields were obtained from irrigated lands in the Lockyer, Fassifern, and South Burnett. Both acreage and yield were estimated to be over average for the spring crop.

During the December-January period of extreme heat, losses occurred in seed potatoes held for normal autumn plantings—a circumstance which, in combination with the prevailing high prices for seed, resulted in some reduction of the acreage ultimately cropped. However, a generally favourable season otherwise largely offset the reduction in area. Resultant acreage yields were high, except in some localities where floods occurred early in the season.

Average prices were high throughout the year, apart from the normal lowering of values because of heavy seasonal deliveries in November and May.

Up to £30 a ton was paid for good quality potatoes in February. To this economic factor increased interest in potato growing throughout the northern and central districts is largely due.

PEANUT.

Peanut-growers in the South Burnett had a favourable year, the yield and quality of nuts harvested being satisfactory throughout.

Cloudy weather during harvesting brought about slow drying in the stooks and some darkening of the shells, although the kernels were not affected. The yield from the Virginia Bunch variety at Coolabunia was extraordinarily high. Seed treatment of peanuts with either ceresan or agrosan, in accordance with the recommendation of the Department, has been generally adopted, with a resultant improvement in germination.

Experiment work in the Kingaroy district included Virginia Bunch strain trials, peanut seed grade trials, and peanut varietal trials.

The new silos built at Kingaroy to give greatly increased accommodation mark an important advance in the co-operative marketing of the crop.

FODDER CONSERVATION.

Seasonal conditions were again favourable for the production of both winter and summer fodder crops.

Some increase in the conservation of hay and silage was observed on the Darling Downs. In the Central Division more attention was given to hay production from winter cereals, lucerne, Rhodes grass, and Sudan grass than to silage; while in the Mary Valley, despite vigorous growth, seasonal conditions were not conducive to the curing of good-quality lucerne hay. A remarkable advance was made on the Atherton Tableland, where assistance was provided by the Bureau of Rural Development to facilitate the construction of pit silos of the concrete collar type. With the help of field officers, forty-four new silos were constructed and filled during the autumn months, chiefly with maize and cowpea, or maize and velvet bean. It is gratifying also to record an increasing interest in this form of fodder conservation in other parts of the State, particularly in the Boonah district. The number of silos of various types constructed in Queensland during the period under review greatly exceeded the number constructed in any previous year. Pit and trench silos, which can be constructed at a relatively low cost, are being advocated wherever applicable to local conditions.

GENERAL.

Interest in pasture improvement is extending in every dairying district, resulting in a strong demand for seed and rootlets from the various propagation plots.

Experiment work conducted in co-operation with officers of the Division of Plant Industry (Research) covered investigations relating to the production of a wide range of crops, including barley, cow cane, cowpea, pig fodder crops, grass propagation, general fodder crops, pastures, green manures, lucerne, maize, onions, peanuts, potatoes, silage crops, grain and saccharine sorghums, sweet potato, Sudan grass, tobacco and wheat. Plots numbering 291 are being supervised by field officers, in addition to normal advisory work in their respective districts.

New district offices have been established at Bundaberg, Monto, Gympie, and Kingaroy—all important farming centres.

To this general survey are attached summaries of the conditions, production, and progress of agriculture during the past year in every division of the State.

C. J. McKEON,
Director of Agriculture and Senior Research Officer.

STAFF REPORTS.

SOUTHERN DIVISION.

SEASONAL CONDITIONS.

Seasonal conditions, with the exception of several weeks in December and January, when a heat wave prevailed, were very favourable for production throughout the year. The hot weather was of greater intensity and longer duration than for several years past. The rainfall each month, however, was, generally, more often over than under average. March, April, and May, particularly, were months of beneficial rainfall and unusually mild temperatures, thus favouring both crop and pasture production.

PASTURAGE.

Although growth was checked by the heat wave, there was an abundance of grass and herbage. Early in the year generous and widely distributed rainfall induced an excellent growth of winter and early spring grasses, which shed a very considerable amount of seed. Many species which appeared rarely in previous years were abundant, particularly cranesbill, various trefoils, prairie, danthonia, wheat grass, certain species of stipa, and others. Good rains in March and April also induced early and excellent germination of winter-growing kinds, which have made much progress since, prairie and burr trefoil being very vigorous.

FODDER CROPS

The excellent seasonal conditions in the early part of the year favoured heavy growth in winter cereals and an early sowing of summer-growing kinds. Although affected severely by the heat wave, crops made an excellent recovery when rain fell. Late sowings made particularly strong growth. Throughout the year feed for farm animals has been in ample supply, and as a consequence, dairy production has been greater than for years past.

With a surplus above immediate requirements, there has been some increase in the quantity of fodder conserved both as hay and silage.

WHEAT, OATS, BARLEY, AND CANARY SEED.

Excellent crops of wheat, oats barley, and canary seed were harvested, yields being much over average. Rain at harvest time had a bleaching effect on much of the wheat, but the higher yields compensated for any slight decline in value. The collective area under wheat constituted a record, as did also the grain yield. That under oats, barley, and canary seed was not increased to anything approaching the same extent, but a greater proportion was harvested for grain.

Sowings of long and medium season wheats, as well as oats, through the very favourable conditions prevailing in March, April and May, have been large. Growth of each has been excellent and now provides much fodder for grazing.

MAIZE.

The crops sown very early, which tasselled late in October or early November, gave some return, but the main crop sown in October and November was a total failure because of the heat wave. Crops of short-season varieties, however, sown in late January, and even in early February, have shown a remarkable growth, with heavy cobbing, and should yield well, now that damaging frosts have been delayed.

SWEET SORGHUMS.

Very heavy crops have been grown on the Darling Downs and neighbouring territory. The growth of sorghums expands as stockowners come to appreciate their value. Although grown most largely for dairy stock, sorghums are now being grown for fattening cattle, as well as sheep. Varieties known respectively as sacchaline, imphee, and red imphee, which are generally sown, are the result of so much interpollination that a determination of one or other is often most difficult. Where pure seed of the honey variety was sown, the yield in every case was much in excess of that of any other kind.

GRAIN SORGHUMS.

The growth of dwarf kinds of grain sorghums, chiefly Wheatland Milo and Brown Yolo, received an impetus due to the publication of the fodder analyses made last year. Known sales of seed have been sufficient to sow 8,000 acres, but possibly the aggregate of areas is less because of a heavier seeding than that advised.

The behaviour of this crop under such adverse conditions as caused maize to fail has created much interest.

POTATO.

The early potato crop sown in August and September was checked by hot and dry conditions, and yields were consequently very low. The late or February sown crop, however, although collectively small in acreage, will give satisfactory returns.

TOBACCO.

Attempts to raise plants without the careful use of benzol in the control of blue mould in the seed-beds resulted in failure. Seasonal conditions appeared conducive to the propagation of the fungus, as almost all unprotected seedlings became affected. Consequently, many growers turned their attention to other crops, while some who persisted by resowing and by using benzol as a control raised enough healthy plants for their requirements. Because of this setback, the collective area proposed at the beginning of the season—about 900 acres—was eventually reduced to 520 acres. Apart from the seed-bed trouble, the crops were grown without difficulty. Insect pests were less in evidence than usual; sun-scorching during the hot and dry period was noticeably less; while field mould, though occurring after good falls of rain, caused less damage than in previous seasons. Yields, on the average, were equal to, if not a little better than those of the previous year. Prices at auction, so far, have been very satisfactory, up to 48d. a lb. being realised. A considerable extension of the acreage under crop in the Texas, Yelarbon, and Inglewood districts is indicated in the coming season.

Last year, according to sales by auction and locally, 101 growers sold from 629 acres 548,138 lb. of leaf for £51,746 17s. 6d.—an average of 22.65d. a lb., and an average return of £82 5s. 4d. an acre. The average price per lb. was in excess of all other districts, with the possible exception of Dimbulah, while the average return per acre was easily the best in the State.

FIELD CROP TRIALS.

Tobacco with varying quantities of fertilizer with controls was planted as four replications in 16 plots at Glenarbon, in the Yelarbon district. Results are not yet obtainable.

Seed selection areas of several sorghums and comparative trials of some grain sorghum varieties with maize were arranged. Seasonal conditions did not allow of sowing until late in January. Excellent growth has been made in all plots, and, if frost holds off for some time, good returns should be obtained.

WEED CONTROL.

The prevalence of noxious as well as other weeds of little, if any, fodder value is a factor in the lessening of yields from cultivated crops, as well as from pastures. While many can be controlled by adequate soil tillage, or by common weed-killing agencies, there are several which present definite problems. Of these, European bindweed (*Convolvulus arvensis*) is a very troublesome growth, which is spread through the field by farm implements distributing parts of broken roots which are rather brittle. Even small pieces of its roots will grow much more readily than those of Johnson grass. Poisonous sprays, much weaker than ordinarily advised, have been suggested as a means of control. The object of weak applications is to allow the poison to become disseminated through the plant and to thus slowly cause its complete destruction. Mint weed (*Salvia reflexa*) presents another difficult problem, although it is generally controllable by soil tillage. In pastures, particularly those which have been close grazed, however, this weed has spread to such an extent as to preclude growth of grass. Its control in pastures, and particularly on roads, appears practicable by the introduction of grasses of strong growth and aggressive nature, as well as of others which come away early in the spring before soil temperatures are sufficiently high to favour mint growth. Trials in control in the Pittsworth district have shown that two of the recently introduced grasses supplied from the Toowoomba plots—tussock love grass (*Eragrostis curvula*) and *Panicum marikarikensis*—give distinct promise of control. A native species of Urochloa (*Urochloa panicoides*), of annual duration, also is suggested, as its seeds germinate early, allowing plants to get a good hold before the mint becomes dominant.

Polygonum convolvulus, commonly termed buckwheat or convolvulus, and *P. aviculare,* known as knotweed, are aggressive in cultivations and, in seasons of light rainfall, deterrent to crop production. Cultural methods and crop rotation are considered the best means of control. *P. convolvulus,* besides hindering growth, is troublesome in fields of wheat, oats, barley, and canary seed when harvested for grain, not only from the binding of the growth by the climbing vine, but through the mixture of seed with that of the cereal, from which, especially in the case of canary seed, it is difficult to separate. To determine if control in a growing crop is possible, a series of experiments with various weed-killing sprays was conducted. The result proved that such control was economically practicable.

Although the combination of sulphuric acid with arsenic has been used previously as a weedicide, its addition to a solution of iron sulphate is not thought to have been previously tried. The combination proved to be much more effective and economical than either material used alone at much greater strength. Its low cost opens up the possibility of control of other weeds more economically than was previously possible. Although the solution of sulphuric acid with arsenic pentoxide is equally effective and slightly cheaper, it has the disadvantage of being poisonous, while growth sprayed with the acid and iron combination can be consumed by stock without any apparent ill-effect.

Johnson Grass.—Experiments with the previously mentioned sprays, as well as with others of sodium chlorate with and without the addition of sodium chloride, were slowly effective in eradicating Johnson grass. Where this grass, however, was growing in isolated clumps, it was found easily eradicable by baring a root and immersing it in a tin or bottle containing a solution of arsenic pentoxide, or either of the combinations mentioned with sulphuric acid. When such treatment was given, the collapse of the whole plant very shortly followed. Such an application to a root of a growing shrub or tree also proved completely destructive. A more economical method of eradication than spraying the growth or by cutting and swabbing the bruised stump of many persistent growths is thus suggested.

PLANT INTRODUCTIONS.

Legumes and grasses numbering 66, seed or roots of which were mainly obtained from the plant introduction branches of the Council for Scientific and Industrial Research at Canberra and Lawes, respectively, are at present under trial in the plots at Toowoomba.

INSECT PESTS.

No damage of any consequence was caused during the year by grasshoppers, either on cereal crops or tobacco, their natural enemies apparently having gained control. Some loss was caused by caterpillars in barley and canary seed towards the close of the season. Pests of this nature are usually not reported until widespread and when approaching their larval stage.

PLANT DISEASES.

Beyond the incidence of blue mould in tobacco plants in the seed-beds and that in the field previously mentioned, there was apparently a lower infection of growing crops than in the previous year.

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Senior Instructor in Agriculture.

ROMA DISTRICT.

SEASONAL CONDITIONS.

The season has been one of exceptional contrasts. After a mild early winter, during which frequent showery spells were experienced, a period of severe frosts set in, which, however, was of only short duration. The Western Downs was favoured by early spring storm registrations, up to eight inches being recorded east of Yeulba in October. The western portion of the district, however, received little of this rain, and by the end of the year only 356 points had been registered in Roma for the six months ended 31st December—December being the driest for fifty-five years at this centre. The dry period was remarkable for a protracted and severe heat wave, which further intensified the bad conditions in the west and offset the value of the earlier storms in the east.

The dry spell broke on the 24th January, when heavy rains were received throughout the district. Despite the rain, however, the previous heat had been so intense that neither crops nor grass made much progress until March, when further rains fell over the whole of the area. Further useful falls in April and May consolidated the position, and the outlook for winter became more favourable than for many years past.

PASTORAL CONDITIONS.

The flood rains of May, 1938, produced a good body of feed and ample water for winter. Although herbage tended to dry off during early spring, storm rains in October influenced a heavy growth of grass in the eastern portion of the district. Western pastures during this period were, however, rather short, particularly on heavy soils.

All pastures wilted in the summer heat wave. A distinctive feature of the January storms was the varying response of pastures after the severe heat. Throughout the district, grass came away with great rapidity, but on the open plain country, unprotected forest, and scrub country from which all timber had been cleared, the pasture developed a meagre root system and showed marked lack of vigour. On the other hand, growth in ringbarked scrub land, where a good cover of timber had been left, responded vigorously. In view of the immense acreage of brigalow and belah scrub now being brought into productive use, this factor is of major importance in determining the correct treatment of these scrubs, particularly in the early stages of land settlement. Apart from necessary clearing for cultivation, there is a tendency to remove all timber as quickly as possible, and the disadvantages of this practice have at no time been more manifest than during the current season. A good stand of wilga, because of its feeding value, is kept open enough by stock to allow ample grass and herbage to develop; besides the protection afforded by it is of great importance.

Heavy pasture growth followed late summer rains and absence of frosts until late in June, and there is now sufficient feed for dry stock until spring.

As a result of the continued warm and humid conditions following the January rain and the absence of frosts, blowflies were particularly troublesome throughout the district.

WHEAT.

A good winter, combined with an increasing use of machinery, and the opening-up of considerable areas of new scrub land cultivation, have been responsible for a record wheat season, both in respect of acreage and yield.

Despite good winter conditions, crops showed ample evidence of the value of thorough summer fallows, and in innumerable instances catch crops sown during May showed a tendency to dry tip during August and September, and gave a pinched grain on harvest. Crops grown on well-prepared fallows finished well, and very high yields were obtained, particularly from brigalow and belah scrub lands.

The harvest was interrupted by frequent storm rains from Wallumbilla eastwards, and there was consequently a high proportion of bleached grain.

As a result of the excellent autumn rains, fallows for this season's crop have been well charged with moisture, and crops generally have had an excellent start.

FODDER CROPS.

Fodder crop acreage, both for winter and summer sowings, has continued to expand, and the interest taken in the possibilities of fodder for both dairying and fattening is remarkable. Considerable success has attended the efforts of settlers during the year, and further extension development of fodder conservation has been possible.

The fodder plots established at Taroom, which included both a winter and summer series, gave particularly good results, and were effective in arousing considerable interest in the neglected potentialities of this area.

SUDAN GRASS.

Good crops were harvested early in the season in the eastern scrub belt, sowings in the west being held up because of dry conditions until January. Favourable conditions then influenced very heavy yields, and, although considerable areas were cut for hay, there was some wastage because of rust and stain.

SORGHUMS.

There was an appreciable increase in the area sown with sorghums, which demonstrated their recuperative powers after the severe heat wave of January. Of the taller types, feterita and sacchaline are the most frequently grown. The former preponderates. As regards drought resistance and feeding quality, work on the newer varieties such as Italian sorghum should prove instructive.

Grain sorghums also have given good results. The keen interest taken in these crops and the experiment work conducted in the district points to their increasing popularity, and it is believed that they will fill an urgent need for a summer grain crop for general farm purposes.

COWPEA.

Cowpea appears to be gradually earning a place in fodder programmes in the district, although the acreage is not increasing to the same extent as sorghums. Good results were obtained from areas at Wallumbilla, Drillham, and Columboola. With means of eliminating waste and cutting costs of subdivision to a minimum, there should be ample scope for the greater use of cowpea as a fodder crop for sheep.

C. H. DEFRIES,
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GYMPIE-MIRIAM VALE DISTRICT.

MIRIAM VALE.

SEASONAL CONDITIONS.

Around Miriam Vale, flood rains alternating with intensely dry periods were against crop establishment and production. Early in the departmental year, low creek flats were still saturated, and this condition was aggravated by further falls in July. August and September were dry. Plant growth was stationary until heavy rain in mid-October; after then it was luxuriant, although for tobacco there was too much moisture for successful crop establishment. Throughout December until late in January, hot, dry weather prevailed until storm rains revived vigorously all vegetative growth; but waterlogging of the lower lands dispelled hopes of crop survival.

TOBACCO.

Because of the general weather conditions together with an outbreak of blue mould, the 1938-39 season was a disastrous year for tobacco-growers in the Miriam Vale and Bundaberg areas.

The establishment of experiment plots met with little success. Seed-beds for a varietal trial were planted four times, but at no time were sufficient plants of all varieties available to complete the trial planting. Of those actually planted on a commercial basis only a very poor strike resulted.

MAIZE.

Maize crops generally were poor. Very early sowings suffered less than later plantings from the dry spring and returned fair yields. Many crops failed because of an attack of mosaic. Generally, crops gave so little promise of grain that they were fed off to stock during the dry spell in midsummer.

GRAIN SORGHUMS.

Keen interest is being taken in grain sorghums in the Mount Larcom district, especially since the establishment of poultry-farming there. Every poultry farmer grows a small area, and the results obtained have stimulated interest in grain sorghums generally, especially in the new American dwarf varieties propagated by the Department. This year, sorghums yielded well in comparson with maize.

Two trials embracing four varieties of grain sorghums and maize were established in this district. Two stud seed plots also were planted.

POTATOES.

Except on well-drained sandy alluvials, planting of the spring crop of potatoes was delayed by wet weather. On most creek flats, ploughing was done under difficulties. Crop yields were fair and quality fairly good. In some places October rain checked the completion of harvest, and, although these late harvests showed a high proportion of second growth, they realised higher prices at a time of market scarcity than earlier baggings of better quality.

WINTER CEREALS.

Although sowings on heavier soils had been somewhat restricted, March (1938) rains had made conditions excellent for the planting of winter cereals, and extensive areas were grown.

These crops provided abundance of fodder until September, when dry conditions intervened.

Two winter green feed trials, comprising wheats, barleys, oats, and field peas, were conducted at Mount Larcom and in the Boyne Valley.

WINTER PIG FEED CROPS.

Generally, scanty consideration is given to the winter production of crops suitable for pig feed. This year, probably influenced by the favourable early rainfall, extended areas, principally of rape and turnips, were grown. Many farmers, however, found such crops profitable dietary additions to milk and grain for their pigs.

Two trials were arranged in the Mount Larcom and Boyne Valley, with a view of increasing the popularity of these feeds.

PASTURES.

Pasture renovation and improvement has been an important part of the year's work. Seasonal conditions were against a completely successful establishment of lucerne.

GYMPIE.

Dry conditions were generally prevalent in the Gympie district, until the heavy rainfalls of late January. From then onwards, a series of persistent showers commenced, and continued with few breaks of fine weather, until June. Rain was recorded on 84 days.

Both crop and pasture growth was robust, but lost vigour and sweetness as the unusually prolonged wet weather continued. Harvesting, especially of hay crops, was severely restricted. Late summer crops, especially maize, benefited through the absence of frost. The year concluded with cold, drying winds.

MAIZE.

Early crops were poor, many failing to warrant harvest; but later crops, particularly Improved Yellow Dent, are giving excellent yields.

SEED PROPAGATION PLOTS.

A plot of Funk's 90-Day, at Imbil, was low in yield and grain quality. Three plots of Improved Yellow Dent are yet to be selected from, but good yields are assured.

POTATOES.

Potatoes are now being dug and good yields are being bagged, particularly on well-drained soils. On wet soils some loss was caused by rotting and scab. Throughout the growing period persistent rain kept the soil wet, and the plant growth was not an indication of heavy yields.

A variety trial, comprising nine varieties, was established at Imbil, from which satisfactory crops were harvested late in May.

LUCERNE.

Weather conditions since January have been unsuitable for the curing of hay, and, while lucerne has generally shown vigorous growth, little hay has been stored.

WINTER FODDER CROPS.

The establishment and growth of early-sown oats was satisfactory, but the late preparation of land for successive sowings has been hampered by persistent rains.

An oat-grazing trial, in combination with an oat-green fodder trial, has been planted at Sexton; and an oat variety rust-resistance trial of 15 varieties in replicated chain strips, at Tuchekoi, was recently completed.

W. R. STRAUGHAN,
Instructor in Agriculture.

THE SOUTH BURNETT DISTRICT.

Crop returns have, generally, been satisfactory. Favourable late spring and early summer weather was followed by prolonged hot, dry conditions in December and January. Substantial relief came at the end of January. February, however, remained rather dry, but many farmers planted maize then which normally would have been sown in December. March and April produced an excess of cloudy weather, but rather low rainfall totals. Mild weather persisted until the end of May, enabling many crops to mature before frost occurred.

PEANUT.

In yield and quality, the peanut crop throughout the South Burnett has been very satisfactory, although cloudy weather at harvest time (March and April) was the cause of slow drying in the stooks and some husk discolouration. The Virginia Bunch variety produced the unusually high yield of 48 bags—144 bushels—to the acre.

The need for suitable rotations has been stressed, and this has led to alternations in crop sequence in accord with sound farming practice.

Virginia Bunch strain selection work was continued, four strains of the original selections being tested with bulk Virginia Bunch seed as a control.

A series of seed grade trials was designed to determine the possible disadvantages accruing from the use of third-grade (shrivelled) peanuts for seed and the effect of repeated plantings of the different grades selected from plots of similar grades.

To ascertain the value of a number of introduced varieties of peanuts, in comparison with those commonly sown in Queensland, 24 varieties were selected from introductions originally sown at Kilcoy. These were planted in October, but an estimate of the possible value of each variety has not yet been completed.

SORGHUMS.

A varietal trial, which included 15 varieties of grain sorghum and six varieties of sweet sorghum was planted at Wooroolin. Planting was delayed until the 1st February because of dry weather. This late planting has naturally affected the period to maturity of the various varieties, but a considerable volume of information has been recorded.

Grain sorghum spacing trials, grain sorghum variety and maize trials, and pure seed plots, were established in different parts of the district as part of a general plan of crop improvement.

Other Field Trials.

An experiment to determine the relative grazing value of four varieties of oats was commenced. An experiment to determine the relative grazing value of Algerian Sunrise, Mulga, and Belah oats was planted at Mannuem. Favourable weather has produced a satisfactory stand of all varieties, but the first grazing will not be available until the end of July at the earliest.

The production of cowpea seed was maintained at the previous levels of yield and quality. Results with bean seed indicate a possible increase in the production of these seeds in future years.

Maize.

While very early maize crops yielded satisfactorily, mid-season plantings were badly affected by a heat wave of unusual intensity. Returns from late-sown maize were good, although the planting of a considerable acreage was delayed through stress of weather until early February.

Pastures.

Sudan grass has maintained its popularity as a grazing crop for dairy herds during the summer, and a large area was sown.

Pastures generally have been in fair to good order for most of the year, but erratic rainfall distribution caused water shortages in some localities.

J. A. KERR,
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UPPER BURNETT DISTRICT.

Climatically the summer and autumn have been the most favourable in the experience of district farmers.

Crops.

The Upper Burnett, with its remarkable variety of soils, mostly highly fertile, produces in good seasons practically every crop necessary for profitable dairy production.

Crops growing in profusion during the past year included lucerne, panicums, maize, cow and poona peas, sorghums, millet, pumpkins, mangolds and potatoes. At present, large areas of oats are being grazed, while later plantings of that cereal and prairie grass have ensured ample winter feed. Of these crops, lucerne is, of course, the most important, and its adaptation to the soils of the higher scrub country is being tested by improved farm practice.

The quality of lucerne hay and chaff produced in this district is, however, only fair, because of the fact that climatic conditions are usually against perfection in the curing process.

Maize yields were higher than the general average, and a large proportion of the aggregate yield will be fed to farm animals.

As a ration for both cows and pigs, cow and poona peas are favoured by farmers who have little lucerne land. Combined with sweet potatoes and mangolds, the nutritive value of these legumes is appreciated in feeding economy.

Both panicum and Japanese millet are grown and grazed extensively, apart from, or in addition to, supplying the needs of dairy herds during the summer and autumn in less fertile regions. Crops of their characteristics are proving valuable as coverers and cleansers of weedy lands.

Sorghums are proving a valuable crop where cows and pigs have to be provided for on a large scale. Grain sorghum varietal trials laid down near Monto, stimulated interest in their value. In animal husbandry, a demand is anticipated for the general use of better type grain soghums in both maintenance and fattening. In pig-raising particularly, it has been observed that even a light ration of grain sorghum heads has been remarkably beneficial.

It has been estimated that the variety Hegari grown on fertile soils, is capable of yielding up to 90 bushels, and over, to the acre of this grain; it also has the advantage of a fairly sweet stalk. Kalo is a variety which would, in all probability, produce better on poor soil than Hegari. In grain yield it is strong, but it lacks the sweetness of stalk and flouriness of grain which Hegari possesses.

As mentioned in previous reports, potato yields in this district are satisfactory, but it has to be admitted that the quality is poor. It is believed, however, that further field trials will provide data on which a general crop improvement may be based.

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BUNDABERG DISTRICT.

Tobacco.

Continuous summer and autumn rains caused waterlogging on large areas of tobacco lands, and, consequently, destruction of tobacco seedlings on many farms. These conditions also were conducive to the spread of blue mould in the surviving plants. Another effect of the unusual weather was an infestation of gall worm, which stunted crop growth in most of the plantations. Bud worm and leaf miner also were worse than in the previous season.

Production of cured leaf was approximately 35,000 lb., as compared with 151,000 lb. last year. With the addition of the Koolboo and Yandaran curings, another 10,000 lb. may be added to the Bundaberg crop, making 45,000 lb. of marketable leaf for the season.

Yield average in the Miriam Vale district was 448 lb. to the acre, and in the Bundaberg district, 454 lb.

Maize.

Very fine crops of late maize—mostly 90-Day—have been produced this season, while early maize was a failure, because of dryness in November and December. Crops of 40 bushels and over to the acre have been produced.

Several varieties, such as Star Leaming, Fitzroy Improved, Yellow Dent, and Funk's 90-Day, are under trial, and have shown promising yields.

POTATO.

Only a very limited acreage was planted with potatoes, but it is anticipated that an increased area will be sown next season. Very fine crops are grown along the river flats, and on red soil country, and yields of from six to eight tons have been obtained.

SWEET POTATO.

Very heavy yields of excellent quality sweet potatoes are grown throughout the district, and especially in the loamy river soils.

TOMATO.

Tomatoes are grown extensively, but more especially as a winter crop, and excellent yields are usually picked. In May growers obtained 10s. per half bushel case. The fruit was of excellent quality.

PUMPKINS.

The late crop of pumpkins has been exceptionally heavy, and there has been a glut on the local market. Early planted pumpkins were sold at very high prices, because of a practically bare market. Some growers got phenomenal returns from small acreages.

ONIONS.

Small areas of onions are being tried experimentally throughout the district, the variety grown being mostly Brown Spanish.

WINTER CROPS.

Little is known locally about the growing of winter feed, and much interest has been aroused in their possibilities. There is plenty of scope for expansion throughout the dairying country.

PASTURES IMPROVEMENT.

On every farm visited information is being sought about the introduction of new grasses, also clovers for the improvement of pastures. Experimental grass trials to be established and conducted on several of the different soil types found throughout the district, have been planned.

R. A. TARRANT,
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CENTRAL DIVISION.

Seasonal conditions during the year, in most parts of the Central Division were the best experienced since 1933.

PASTORAL.

There was no shortage of feed throughout the year, and no movements of stock for agistment, except in some of the western districts. At present, there is an abundance of grass and water to carry the stock through the winter.

DAIRYING.

The past year has been an excellent one for the dairymen in the dairying areas of the Central district. Since the year 1937 the seasons have been very irregular, and the dairy farmers have had a very trying time until the commencement of the present conditions in March, 1938.

FODDER CONSERVATION.

Although the past twelve months have been ideal for the growth of all crops, there is no indication that farmers generally have made any greater effort to conserve fodder than has been done in the past. One farmer in the Etna Creek district has erected a concrete silo, and several enquiries have been received in connection with the loan of moulds for the purpose.

Considerable quantities of lucerne and Rhodes and Sudan grass hay have been stored, but a much greater quantity should have been harvested.

CROPS.

MAIZE.

Generally, the year was a good one for the agriculturist, in spite of the wilting of crops during December and January.

Early sown maize crops grew well until the tasselling period in December, when light rainfall and hot weather caused them to wilt badly and become a total failure in many parts of the district. The late crop planted in January was the best crop produced in the Rockhampton district for many years.

POTATO.

The early potato crop, planted in July and harvested in October and November, was an exceptionally good one, being very free from disease. Some excellent baggings of Carmen, Up-to-Date, and Bismark varieties were made.

The high prices for potatoes since the beginning of the calendar year influenced an increase in the acreage usually planted late. Yields were good and quality excellent.

PEANUT.

Because of the poor yields and low prices of the previous year, the peanut acreage was considerably reduced. The present crop has been harvested, with good results.

PUMPKINS.

The early pumpkin crop gathered in December, was fair. High prices early in this year induced farmers to extend their acreage, and from which returns have been exceptionally good.

SWEET POTATO.

More attention was given to sweet potato growing during the year. Cuttings of the most suitable table varieties were in strong demand. Although the season has been favourable for this crop, yields in most cases have not been high.

SORGHUMS.

Fodder sorghums, mainly honey and saccaline, were planted throughout the coastal districts, and will provide many tons of winter fodder. Honey sorgo is the most popular with dairy farmers, because of its heavy yielding capacity and high sugar content.

There was a considerably increased acreage of grain sorghums. These sorghums are gaining in popularity each year, because of their ability to withstand the erratic seasonal conditions of the Central Division, and also their value as poultry and stock food.

Wheat.

The wheat areas in the Callide and Dawson Valleys produced a record crop for the 1938 season. Lack of rain in June has delayed this season's plantings.

Summer and Winter Green Fodder Crops.

The winter of 1938 was excellent for the growth of wheat, oats, barley, rye, and other crops cultivated for fodder. The hot, dry weather in summer retarded the growth of most of the summer fodder crops, and they were chiefly grazed off by stock. A large area of winter crops has already been planted.

Experiment and Seed Selection Plots.

A grass variety trial was continued at Pink Lily, from which rootlets of all the varieties under test have been distributed to farmers in different parts of the district.

The plot at Farnborough has been extended, and the most promising grasses planted there were *Cynodon plectostachium* and *Amphilophis insculpta*. Both have been set out in a separate paddock, and will shortly be under a grazing test.

Tobacco.

Tobacco seed-bed plants were free from disease and insect pests. During the growth of the plants there was an outbreak of blue mould in the district, but the departmental seed-beds escaped infection. Spraying with colloidal copper was continued until the plants were set out in the field. An area was selected at Parkhurst, as a pure seed selection plot. Varieties planted were Cash, Warne, Gold Dollar, and Yellow Pryor. During their early growth, hot, dry weather gave the plants a severe setback, but during the cooler weather and better rainfall, satisfactory growth was made.

Nine tobacco seed propagation plots were established at Bouldercombe, Gracemere, Glenmore, Pink Lily, Nerimbera, Archer, Frenchville, and Farnborough, respectively. Varieties planted were Gold Dollar, Warne, Cash, Yellow Pryor, Kelly, and Bonanza. These plots have been the most successful in the Rockhampton district for some years.

Experiment Work.

Field experiment work for the year included a grain sorghum trial in combination with a merit test of grain sorghum and maize; other grain sorghum trials, saccharine sorghum trials, sweet potato variety trials, wheat variety trials, oats grazing trials, an oats green fodder trial, oaten hay variety trials, and cow-cane variety trials.

At the Barcaldine experiment locations, seasonal conditions were good.

The Alice River contained sufficient water for irrigation purposes throughout the year. Small trials of wheat, oats, rye, and barley were carried out during the winter of 1938. These were followed by demonstration plots of summer fodders, including white panicum, Japanese millet, Sudan grass, and cowpea. Tobacco variety trials with Cash, Gold Dollar, and Kelly varieties were conducted, but because of a severe attack of stem borer this trial was discontinued.

A trial area was planted with sixteen varieties of grain sorghums, including Wheatland Milo, Day Milo, Ajax, Brown Yolo, Kalo, Hegari, Chiltex, Shrock, Feterita, Texas Black Hull Kaffir, Reed, American Early Red, Natal 6, Giza 4, Black Hull C171, and Pot. Dawn. This trial was an exceptionally good one, as all varieties made splendid growth. It was observed that under western conditions heads were larger than when grown on the coast, but there was very little stooling. Comparative yields of the several varieties were taken as to quantity of grain. Kalo was the highest yielder. Further demonstration plots with winter green feeds were planted during the last week in May.

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MACKAY DISTRICT.

A very dry early spring was the experience in the Mackay district. From October onwards, good rains were registered and seasonal conditions were very favourable for pastures, although the rainfall was excessive for tobacco and general crop production.

Tobacco.

Planting of late tobacco crops was delayed because of the waterlogged condition of the lands; the preparation of land for other crops also was held up.

A small area of tobacco was planted out in November, and made good steady growth. Showers were frequent; otherwise conditions were hot. Further plantings in December made excellent growth, from which bright fine-quality leaf was produced.

All late-planted crops were retarded by continuous heavy rains in February, March, and April. Waterlogging and lack of sunshine also caused premature and very early flowering in the field. When crops were recovering in mid-April further heavy rains fell and were succeeded by a cold snap. Blue mould developed rapidly in the field and afterwards extended to the seedbeds. Crops up to two feet high were wiped out, while the yield of more mature crops and their leaf value were greatly reduced.

All late-planted demonstration plots had to be abandoned, with the exception of a varietal trial at Dunwold, the details of which are not yet available.

Grading of leaf on the farm has been done where facilities were available, with satisfactory results. Prices for local leaf were generally satisfactory.

Stem borer has been prevalent throughout the season; otherwise pest attack has been negligible. Leaf spot was prevalent in late crops because of continuous wet weather. About half of the late-planted crop was of the Gold Dollar variety.

Other Crops.

Wet conditions severely hindered cultural operations, and summer plantings of crops has been adversely affected. Maize crops made satisfactory growth and yields well. Rain, however, delayed harvesting.

Interest is increasing in potato cultivation, and many promising crops, of which Bismark is the chief variety, are to be seen through the district.

The growing of vegetables is becoming more general. Excellent crops of tomatoes are being harvested.

PASTURES.

The practice of improving pastures by planting introduced grasses is gradually extending. The favoured grasses on the coastal scrub country are Rhodes and molasses, while African Star has made remarkable growth in the O'Connell River area. The value of Para grass is now being recognised, and small areas of low land are being planted with it. It is anticipated that larger areas of Para will be planted for grazing in the coming summer. At Eungella, kikuyu and cocksfoot are doing exceptionally well, while white and red clovers also are very satisfactory. A new grass plot has been established at Glenella with promising grasses from the Bureau of Tropical Agriculture, South Johnstone.

FODDER CONSERVATION.

Because of the dry springs usually experienced in the Mackay district, interest in fodder conservation is widely extending.

FIELD EXPERIMENT WORK.

Included in the investigational projects of the year were an oat grazing trial; a green oat fodder trial; lucerne trials; fertilizing trials; and onion trials.

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NORTHERN DIVISION.

TOWNSVILLE DISTRICT.

The rainfall in the Townsville district, although lighter than usual, was well distributed throughout the year. Flood waters in the southern portion of the division at no time amounted to more than a river fresh. Grass and water have been plentiful. In the Far North, the wet season has been unusually long.

TOBACCO.

Early planted tobacco had good rain for its development, and grew into fair stands. Curing commenced better than it has for many years past, and some bright coloured leaf has been baled. The absence of rain since March is now having its effect on the crop, which is commencing to break down on the tips and edges. The later planted leaf has remained stationary for some considerable time. Blue mould developed in several localities, and was the cause of a serious reduction in crop yields.

No mould was encountered at Woodstock, either in seedbeds or later on in the field. In fact, the crops in that area have been remarkably free from disease and insect attack.

COTTON.

The area under cotton for the district is not large, and the yield for the year will be light, the effect of continued dry weather.

Corn ear worm was troublesome in the early stages of the cotton crop.

POTATO.

The area under potatoes has increased. The crops are looking particularly well, and are making very rapid growth.

LUCERNE.

A small acreage of lucerne has been planted this season, mostly around Ayr. Germination with treated seed has been remarkably rapid, and the subsequent growth also has been fast. With deep preparation, nut grass areas can thus be held in check, if a good seedbed is provided. Rapid growth of lucerne in its early stages during May, enabled it to become established before the nut grass became troublesome.

The flooding method of irrigation with check banks at frequent intervals has been practised, and where the ground had been carefully graded this proved very satisfactory. Cultivators are put into the field after every watering, and in some cases disc harrows have been used, but with over-frequent renovations the harrows may destroy the crown. Heavier seedings have been found necessary in order to tide the lucerne over its first year, when weed growth is usually dense. Long fallows are recommended in order to have the seedbed as clean as possible.

OTHER CROPS.

The district produces a considerable quantity of other crops which are planted in small areas on many farms. Pumpkins, maize, and sorghum for green feed are freely grown, particularly on dairy farms where they provide the bulk of the fodder. Vegetables are grown with success during winter, but leaf-eating and sap-sucking insects are troublesome. Tomatoes are now being planted extensively, in order to catch the firming market in September.

EXPERIMENT WORK.

A large amount of experiment work has been done this season. Work at present in progress includes:—A cotton variety trial; three potato fertilizer trials; a lucerne irrigation trial; and two onion variety trials.

The cotton variety trial was planned to determine the best variety or varieties for the Bowen-Townsville district and was put down in February, and has made excellent growth.

Through faulty planting, the strike in some of the plots was irregular, but re-seeding consolidated the block. At present, bolls are forming well, but the crop is suffering from the want of water.

The potato fertilizer trials, each comprising standard 6 x 4 randomised blocks, were well established. The seed sent to plant one of these experiments was the best yet seen by those handling it in North Queensland, and a good germination should be the result. The other plots, planted with farmers' seed, were established at the end of their seeding, and the tubers available were backward seed, the culls from previous pickings. At Woodstock, where one of these plots was established, the germination was about 50 per cent. on the first count. This area was a little rough and tending towards dryness when planted. Each area was planted with seed of the Brownell variety.

An excellent stand lucerne has been obtained on one area, and is making rapid growth in spite of cool weather prevailing. The two onion variety trials were established to determine whether this crop can be grown successfully in the district, and if so, to find out the most suitable varieties.

Two different types of soil were chosen. On one, the seedbed was nicely consolidated, but on the other the prepared ground tended to looseness. Germination of some of the varieties has just commenced on both areas.

T. G. GRAHAM,
Instructor in Agriculture.

MAREEBA DISTRICT.

Seasonal Conditions.

The experience of the year provided further evidence of the variability of climatic conditions in the inland regions of North Queensland. The usual summer stormy period began with light storms late in October. November also was a month of storm rain. Within six weeks, every part of the district had benefited by some substantial rainfall. December, however, was abnormally dry. In mid-January light general rains fell, yielding an aggregate of five to six inches; then followed another storm period. Monsoonal rains commenced early in February and lasted ten days, during which fourteen inches of rain fell.

General rain occurred in March, aggregating thirteen to fourteen inches. Apart from scattered showers, the rest of the season was dry. Wintry conditions became general in June.

Tobacco.

The practice of partial sterilisation of seed-bed soil has become general in these districts. An essential requirement of a tobacco crop is healthy seedlings at a suitable stage of growth at planting time.

Rains in July were very beneficial, in that they made possible a very thorough ploughing before the winter fallow. Most growers took full advantage of the weather conditions and had their land well ploughed while still moist. Further ploughing was done in October in readiness for the season's crop. In irrigation areas, where early planting was desired, the land was given its final preparation at the end of August for September planting. Appropriate fertilizing also was done. Correct fertilizing has resulted in the production of leaf brighter in colour and easier to cure.

In the past, it has been the practice in the irrigation areas to grow two, more or less distinct, crops every season, the first grown entirely under irrigation, and the second under natural conditions with irrigation, if necessary. Of these two crops, the earlier has produced the better results, possibly because of the fact that it has received more attention. This season, practically the whole crop was planted out early. The first plantings were commenced as early as the end of August, and continued until the end of November. These plantings produced some fairly good, even stands, but, as the seedlings became depleted, poorer seedlings had to be used, and the stands became more irregular. Most of these crops made satisfactory growth after planting out and, with irrigation, this was maintained until maturity.

The question of time for planting out under dry farming conditions is still engaging the attention of all concerned. The general opinion is that it is desirable to have the crop established and well advanced before the onset of the monsoonal rains. Consequently, there is a tendency to start planting out soon after the first thunderstorm of the season. Some growers commenced planting on land inadequately prepared for the crop. In such cases, the earliest plantings were made immediately after the first storms at the end of October, but general planting did not commence until November, when further storms occurred. Despite the dry spell throughout December, planting continued on a smaller scale.

In these districts, the practice of hand watering at the time of planting, followed by more waterings when necessary, has now become established. Results apparently warrant the extra labour and expense involved.

Some of the earliest crops planted out in October made very good growth. The main crop planted in November produced excellent stands which continued to grow rapidly during the warm, stormy weather which prevailed during that month. Prospects then seemed exceptionally bright. During six weeks of dry weather which followed, the larger crops continued to make slow growth, but growth quickened after the January rains, so that by the end of that month they had almost reached maturity. Areas which had been planted out towards the end of the dry period survived, but, for some reason, did not benefit by the

January rains. It may have been that these rains caused a rapid diminution in the amount of available nitrogen in the soil, thus partially starving the younger and less advanced crops at a critical stage in their growth.

HARVESTING AND CURING.

Harvesting commenced in January from the earliest planted irrigated crops. Most of the November plantings had ripened before the end of February and curing had commenced in all parts of the district. From the end of January to early February most of the leaf in the Emerald Creek area was ripening very rapidly and growers experienced some difficulty in coping with the curing. However, by mutual assistance in the matter of barn accommodation, very little leaf was lost.

Early cures from irrigated areas were very satisfactory and leaf was of good colour and quality. In other areas, good quality leaf has been the rule, with the exception of late curings in May, when quality had deteriorated considerably, the leaf being very harsh and boardy.

GRADING.

Farm grading is generally favoured and most growers try to grade as much as possible of their leaf on the farm, where it remains under their personal supervision. In this way, the grower also has a better idea of the type of leaf he has produced and submitted for sale. Manufacturers apparently favour farm graded leaf. The tendency, however, is to grade on the basis of colour alone, without regard to texture or size of leaf.

During the past season, at least a third—possibly half—of the crop has been graded on the farms.

Local grading sheds commenced operating in April and are still receiving leaf. A proportion of the leaf, however, has been sent to Brisbane for grading by selling organisations.

PRODUCTION.

In the Mareeba district, 170 growers have cultivated 1,300 acres of tobacco, an average of 7·6 acres. Of the aggregate area, about 300 acres were late plantings which yielded very poorly; the remaining 1,000 acres of earlier plantings have been estimated to have yielded at the rate of over 600 lb. to the acre, with a range of from 1,400 to 400 lb. to the acre. The total crop for the past season has been estimated at 750,000 lb.

Two series of auction sales have already been held in Brisbane, at which from 150 to 200 tons of local leaf have been sold at satisfactory prices. There has been a strong demand for all grades of bright leaf, but competition for lower grades has not been keen.

EXPERIMENT WORK.

Experiments have been conducted in seedbeds and in the field, covering a fairly wide range of investigational projects which had to do with pest and disease control in seedbeds, varietal trials, fertilizer tests, and crop rotation investigations. In all this work growers have willingly co-operated.

Three field days were held in the Mareeba district in the course of the year, to give farmers an opportunity of seeing for themselves the results of experiment work. The first visit was to the seedbed projects to explain and demonstrate the cause and prevention of the disease known as yellow patch. The second field day was held to demonstrate approved cultural methods. The third was held in Dimbulah, where grades of six tobacco varieties were displayed. Each field day was well attended by district farmers.

GENERAL.

Early in the season, the expectation was of a record crop, but seasonal conditions upset all calculations. However, crop results may be regarded as quite satisfactory, and returns were such as to give encouragement for all engaged in the industry.

ROYCE C. CANNON,
Instructor in Agriculture.

CAIRNS-ATHERTON DISTRICT.

Seasonal Conditions.

During the past season, early storms occurred and a large area of maize was planted as a result. As invariably happens when early storms occur on the Atherton Tableland, there is experienced relatively long dry periods which retard growth in early planted crops. Where the dry periods are of long duration, partial failure of the early plantings occur. This was evident during the past season, particularly in the Tolga forest country, where a considerable area of the first maize plantings had to be ploughed out, and replanted.

December to mid-January was an exceptionally dry period. The wet season—a period of continuous heavy rains—was unusually prolonged. At Atherton, seventy inches of rain were recorded from 1st January to 30th June. Dry "breaks," however, always assisted in crop recovery.

Maize.

Weather conditions were not conducive to the production of a good maize crop. The aggregate area planted with yellow maize was more than 27,000 acres, and from which an estimated yield of 21,000 tons of grain from this area is expected. From the present state of the crops, however, it is doubtful whether this estimate will be realised; 18,000 tons may be nearer the mark. The quality of the grain will be inferior to that of the 1937-38 season. The incidence of disease—diplodia—in many maize crops is high, and would appear to be severer where close planting in the drills had been practised. Late planted maize throughout practically the whole of the Tableland is a failure.

The Dairy Industry.

The dairying areas of the Tableland, more especially those situated to the south-east of Malanda to Millaa Millaa, continue to respond to excellent seasonal conditions, with the result that pastures generally show a good body of feed. If winter rains come there should be ample feed to carry dairy herds through satisfactorily until the storm period later in the year begins.

EXPERIMENTAL WORK.

The 1938-39 experiment programme comprises largely a series of fertilizer experiments to determine soil requirements for nitrogen, phosphate and potash, using maize and paspalum as the test crops. This experiment programme follows the series of experiment projects formulated and carried out under the auspices of the White Grub Investigations Committee.

The present year's programme was designed on a broader basis than heretofore, so as to include a series of investigations on the drier alkaline soil zone round Atherton, as well as the moister acid zone east of the Barron River. The work mainly has taken the form of an extensive series of fertilizer experiments covering the possibilities of soil deficiency in available nitrogen, phosphate, potash and humus. Special attention also was paid to the development of a suitable legume-maize or sorghum-silage mixture. A large proportion of the experiment areas have yet to be harvested, but observations so far have been carefully recorded.

SILOS AND SILAGE.

To offset the effects of the dry period usually experienced from August to December, on the Tableland, in the zone where the white grub is prevalent, the only practical remedy appears to be conservation of fodder in a green state as silage, combined with a regular feeding programme for dairy stock. The Government has very materially assisted during the past year by providing for pit silo construction in the white grub area, together with free technical service through the Rural Development Bureau and field officers of the Department. Altogether, 44 new pit slios have been constructed under departmental guidance, and not less than 3,323 tons of ensilage has been pitted during the past season. Silos on the Atherton Tableland now number 73.

With few exceptions, the silage crops during the past season did not yield as well as expected. The generally poor yields were due in the main to adverse seasonal conditions and late planting; also attributable partly to soil deficiencies. A survey of the data relating to all silage crops is being conducted. The wide variation in acreage required to fill the silos is best illustrated by the fact that in some cases eight acres of maize and cow pea were required, while in other cases up to 16 acres were required. The maize-plus-groit-cowpea mixture was recommended for ensilage, but during the past season the maize and velvet bean mixture planted early proved the more satisfactory mixture. It is anticipated that many more pit silos will be put down during the coming year.

PASTURE AND LEGUME INVESTIGATION WORK.

Comprehensive investigations into pasture and legume problems on the Atherton Tableland have been planned.

The matter of using lucerne as the basis of a pasture improvement scheme received close attention by the White Grub Investigations Committee. From these investigations it was found that lucerne failed to become established on certain acid soil patches, and invariably during the wet season the lucerne stand is stifled by weed growth. In addition, pure stands of lucerne have suddenly failed during the wet season, and no satisfactory explanation as to the cause of this sudden failure has yet been made. It would appear, however, that where a vigorous growing summer grass is sown with the lucerne, weed growth is considerably reduced and a better stand of lucerne is obtained.

Seed of persistent strains of clovers and lucernes from various areas of the Tableland have been collected, and these seeds have been planted in small plots from which it is hoped a supply of seed will be available at a later date.

In an endeavour to reduce the white grub numbers, some dairy farmers have been using pigs for the purpose, fencing sections of pasture off with electric fences. This class of fence is very effective in respect of the grazing of pigs. This grazing of pigs was practised during the wet months, when the ground was soft, and when most of the grub population would be within a few inches of the surface. However, apart from and development of pigs' appetite for white grubs, the most interesting thing about this class of grazing will be what happens to the pastures after such treatment.

A. HAMILTON,
Instructor in Agriculture.

REPORT OF THE DIRECTOR OF COTTON CULTURE.

The climatic conditions which existed during the development of the cotton crop under review were much more favourable for successful cotton-growing than were those experienced over the two previous seasons. Two factors operated, however, which reduced yields in some districts, the first one being the prolonged dry conditions that were associated with high temperatures, which operated over the whole cotton belt from early December until the third week in January. The second factor was the wet, cloudy conditions that existed during the maturing and harvesting of the crop in all cotton areas except in most parts of the Central district.

A reduction in both the number of growers and the acreage planted has to be reported. This loss is considered to be purely temporary, however, as factors such as excessively wet, heavy soils preventing the ploughing of old cultivations in some districts, the exceptionally favourable conditions experienced in the dairying industry both in regard to production and prices received for butter fat, and the low yields of cotton produced in the two previous seasons, all operated to restrict the acreage planted to cotton during this season. The improvement in yields of cotton obtained in this season's crop, as compared with those produced in the two previous ones, should result in a substantial increase in cotton-growing in this coming season, and reports received from all districts indicate that this will be effected.

Actually, 45,609 acres were planted by 2,521 growers, as compared with 66,566 acres grown by 3,709 growers in the previous season, showing a loss of 1,188 growers and 20,957 acres. According to the crop returns furnished by cotton-growers to the Queensland Cotton Board, approximately 5,000 acres of cotton did not reach maturity, most of which was abandoned on account of the occurrence of excessive weed and grass growth in the prolonged rainy periods during the early development of the cotton plants.

The development of the cotton spinning and manufacturing industries has rapidly expanded over the past five years, and for the 1939 season the consumption of raw cotton lint in Australia is estimated at 35,000 bales of lint. The shortage of cotton produced in Queensland has thus made it necessary for the Australian spinners to import their unfilled requirements. It is unfortunate that a reduction in acreage occurred this year for the average yield being obtained in the present crop, over a more normal area under cotton, would have produced sufficient supplies to meet approximately the spinners' requirements of the types of cotton grown in Queensland.

Cotton is of vital importance, particularly at present, when the Commonwealth is devising a defence scheme, and increased cotton production should be advocated from an Australian national point of view. Realising the possibilities of supplementing the present acreage of cotton grown under rainfall by means of irrigating cotton, the Queensland Government has instituted a comprehensive survey of the irrigation possibilities in this State.

Seasonal Conditions.—Excellent winter rains of a soaking nature were obtained in July, which allowed of a thorough penetration of moisture to the subsoil, and further lighter but useful falls were registered during August. September was abnormally dry and planting was not general until October, when three distinct rain groups occurred, which enabled most of the farmers to plant their acreage of cotton. Good germination was obtained generally on both cultivated and scrub areas, and warm temperatures were associated with the rainfalls of the month, so that early growth of the cotton plants was fairly rapid and the period from germination to thinning was shorter than usual.

November was remarkable for the excellent distribution of rain that was experienced throughout the whole cotton belt, the main areas averaging 5 inches, made up of useful falls occurring regularly throughout the month. Good strikes of all November plantings resulted under such favourable conditions.

December proved to be a hot, dry month over most of the cotton belt, which had a necessary steadying effect on the growth of the cotton plants, as everywhere they inclined to make too vigorous a development early in the month. Unfortunately these dry conditions, which were accompanied by high temperatures, prevailed throughout most of December, and continued until the third week of January, when much-needed relief was obtained, generally in falls varying from 4 to 14 inches. The definite stress conditions existing towards the end of the dry period caused a considerable amount of square and small boll shedding, particularly on the lighter soils and where seedbeds had been improperly prepared.

Following the January rain, the rate of growth during February was very satisfactory, the crop of bolls being carried by the plants, tending to steady plant development, with the result that a heavy setting of squares took place. In many of the main cotton areas, excessive rain fell during March, which was associated with high temperatures and high humidity. In the Central district less rainfall was experienced, and picking became fairly general during the month.

The effect of the prolonged dull, rainy weather which continued throughout April, in all cotton areas save the Central district, was to delay harvesting considerably, and the exposure of the bolls to such conditions lowered the grades appreciably, and caused rotting of the burrs, thus necessitating a greater amount of snapping being resorted to than is usually done.

Standard of Cultivation.—A lower standard of cultivation prevailed generally than is usually maintained, due chiefly to the climatic conditions experienced. The rains that occurred in July and August were followed by the very dry September, which caused severe packing of the soils, so that where ploughing was done after that the result was a roughly turned-up, cloddy surface, in which the preparation of a proper seedbed was nearly impossible. Owing to the frequency of the rains in October and November, control of weed growth was most difficult, particularly on the old cultivations, where in several instances fields were reploughed and replanted or abandoned altogether.

Thinning was given more attention than in previous years, and proof of the necessity of this operation was evidenced following the drought period of December and January, when any unthinned cotton suffered to a much greater extent than properly spaced plants.

The advantage to be gained by using the cotton-grassland rotation was never better illustrated than during the year under review, both from a point of view of obtaining increased yields of cotton and the reducing of the amount of labour involved in controlling weed and grass growth.

Crop Yields.—To the 30th June, the total receivals of seed cotton amounted to 13,369,503 lb., producing 4,673,000 lb. of cotton lint, or 9,346 bales, each of 500 lb. It is anticipated that the crop will finally yield 12,000 bales of lint. In a comparison of the yields of the season under review with the past season up to the 30th June, seed cotton receivals show an increase of 2,289,139 lb. seed cotton, or 1,560 bales of lint over that of last year, and this increase has been accomplished on a much smaller acreage.

Quality of Crop.—The wet dull periods that were experienced in most districts except the Central district, where harvesting conditions up to May were mostly favourable, were detrimental to the best quality of cotton being picked, and while the early picked cotton gave satisfactory grades, the later harvested cotton was stained and weak on account of the period of exposure to adverse weather. A considerable amount of the crop has again been snap-picked on account of the climatic conditions. Undoubtedly too much snapping is taking place, however, and it is most important that cotton-growers realise that this method of harvesting should only be resorted to when hand-picking is uneconomical.

Grading.—The grading and classing of the crop as usual has been carried out by the cotton graders of the Department of Agriculture and Stock. These officers are also responsible for the preparations of standard reference sets for use by Australian spinners when purchasing Queensland cotton. These sets are copied from the world's universal standards for American upland cotton that are used throughout the world as a basis for valuation of such cotton.

Cotton Research Station.—The usual programme of research was carried out at the Biloela Research Station, with most gratifying results. The average yield of seed cotton for the cotton area of the station, which approximated 56 acres, was 969 lb. per acre, but on the newer country, *i.e.*, the first two years of cotton cultivation, following grassland, the yield increased to an average of 1,483 lb. of seed cotton per acre.

The experiments testing the value of growing cotton in rotation with either native grasslands or Rhodes grass, have again given very clearcut evidence of the merits of this rotation. Gains of 20 per cent. were realised on the more fertile soils, while as much as a 60 per cent. increase resulted on infertile soils where cotton was planted in the third year following three years of Rhodes grass on an old cultivation. Not only is a high yield of cotton obtained with a minimum amount of cultural operations, but also excellent crops of grass of superior quality are produced through using this rotation. It is apparent that farmers are increasingly realising the value of this rotation, especially dairy farmers, who desire to maintain grass of high nutritive feeding value.

The determination of the nitrate content of the soils under different rotations was continued, and interesting results were obtained. Nitrate formation was relatively low throughout most of the growing season, even on the older cultivations. Similar results were obtained in the 1933-34 wet season, and it would appear that when a very wet winter and spring are experienced the resultant soil conditions are unfavourable for excessive nitrate formation during the rest of the season, especially if leaching rains occur during early summer.

Investigations in clay loam soils have again demonstrated the better moisture absorptive qualities of the newer cultivations out of grassland, as compared with the older cultivations, where the organic matter in the surface soil is so reduced that the soil particles adhere together sufficiently to prevent efficient penetration of rains, particularly storm rains, after the last surface cultivation is performed.

Pure Seed Operations.—Pure seed stocks of all of the commercial varieties are now available in sufficient quantities to allow plantings to be made of those types of cottons required by the Australian spinners. Good progress can be reported in the breeding programme for the more important of these varieties. This work is reported fully under the plant-breeding operations of the Division of Plant Industry (Research).

The Lone Star variety is still being grown extensively, especially in a one variety community in the Central Burnett, and continues to give satisfactory results. Some of the more recently developed drought-resistant strains of this variety have yielded excellently this season, particularly the strain Lot 34, which produced approximately 1,600 lb. of seed cotton per acre in the Gayndah district.

The Miller variety has again given very good results, especially in the Callide Valley, and over a great portion of the Central district. It has proved to be the most suitable cotton for all scrub areas in this district, in fact, for all soil types except the better class alluvials it is the predominant variety. The ability of Miller to withstand jassid attack to a certain degree increases its popularity.

New Boykin is a variety of cotton having a staple length of 15-16ths of an inch, and continues to give satisfaction on the medium fertile alluvials and the better class gentle forest slopes. Half and Half, a shorter stapled cotton of ⅞ inch in length, has yielded satisfactorily on the richer alluvials where the Miller and the

New Boykin varieties tend to grow rankly in good seasons. A promising variety of fairly recent introduction is Oklahoma Triumph, which appears to yield well, especially under adverse conditions. This variety is quick maturing, but considerable improvement is necessary in it before a uniform strain will be available.

Seventeen varieties imported last year from the United States of America were planted in small areas in the Southern district, and several of them show indications of being valuable additions to the present list of varieties.

Instructional.—The field staff during the year carried out the usual extension, advisory, and experimental duties. This includes the allocation of pure seed plots and breeding areas, demonstrating methods of combating insect pests, the laying-out and planting of all experimental plots and individual farm inspections. During the harvesting season, all field officers gave assistance in the field selection work.

Insect Pests.—Those insect pests usually associated with cotton plants in the early stages of growth caused no serious damage, with perhaps the exception of cutworms and wireworms, which were responsible for some loss of strikes that necessitated a limited amount of replanting. The rough boll worm (*Earias huegeli*) was present in most districts throughout the season and was responsible for considerable damage to terminal growth, which resulted in the development of a vegetative type of plant. Squares and young bolls were also attacked, and in some areas heavy losses were caused. The corn-ear worm (*Heliothis obsoleta*) was also responsible for damage to cotton in varying degrees throughout the cotton belt, particularly in the Central district. Following the February and March rains, jassid quickly became a major pest in most of the cotton areas, particularly in parts of the Callide and South Burnett districts. This pest destroyed much of the excellent top crop that was formed. Larvae of the yellow peach moth (*Dichocrocis punctiferalis*) and pink boll worm (*Platyedra scutigera*) were responsible for more damage to the late crop than usual, especially the latter, which was present in most consignments of snapped cotton received at the Glenmore Ginnery.

Publications.—The following bulletins and pamphlets dealing with cotton subjects were published in the *Queensland Agricultural Journal* during the year:—

Thinning and Spacing of Cotton, R. W. Peters, Research Officer.

Cultivating Young Cotton, R. W. Peters, Research Officer.

Cutworms in Seedling Cotton, W. J. S. Sloan, B.Sc., Assistant Research Officer.

Cotton Jassids or Leaf-Hoppers, W. J. S. Sloan, B.Sc., Assistant Research Officer.

Trials with Maize Traps in Cotton, W. J. S. Sloan, B.Sc., Assistant Research Officer.

The Annual Report of the Cotton Research Station, dealing with the investigations reported upon by L. M. Hodge, manager, and W. A. R. Cowdry, Instructor in Cotton Culture, for the 1937-39 season, was published in the Annual Report of Experiment Stations by the Empire Cotton Growing Corporation.

Acknowledgments.—The Principal of the Queensland Agricultural High School and College has co-operated during the season in conducting an experiment in which the merits of various fodders and Rhodes grass to precede cotton on a heavy black alluvial soil are being studied.

The Agricultural Chemist has had analysed by various members of his staff a large number of soil and grass samples, in addition to the regular determination of the moisture and nitrate nitrogen content of soils, taken on a fortnightly basis from a series of plots dealing with cotton rotations.

W. G. WELLS,
Director of Cotton Culture and Senior Research Officer.

REPORT OF THE DIRECTOR OF FRUIT CULTURE.

Although weather conditions were not always favourable during the term, the past year was a reasonably satisfactory one for fruit production. Some districts and some branches of the industry naturally—as is to be expected in a big State like Queensland—fared better than others. The deciduous fruitgrowers in the Granite Belt, for instance, although their production was 16 per cent. lower than that of the previous season, had a remarkably good year, which is reflected in the increased trade turnover of local business houses. The banana market has been buoyant, and prices for citrus, papaws, and passion fruit have been payable.

Pineapple growers, faced with increasing production, view with concern a lower factory price, but those who have adopted the improved methods of cultivation, by which their average acreage production has greatly expanded, are not so uneasy.

The Stanthorpe district produced approximately 20,000 tons of fruit and vegetables, as against 24,000 tons in 1937-38, which year was above the average and constituted a near record.

An evergrowing production of pineapples was a noteworthy experience of the year. The 1938-1939 crop is estimated at 1,325,000 cases, as compared with 844,400 cases in 1936-1937, thus representing an increase of half-a-million cases in two years. Of this production, 761,000 cases were processed, and the remainder was sold as fresh fruit on Queensland and interstate markets. Practically every new plantation is being set out and cultivated on the improved lines recommended by the Department, and the huge increase in production is due in large measure to the consequent greater increased acreage yields obtained.

The eagerness of growers to learn all they can of the recommendations of the Department, and the time occupied by attention to experimental and demonstration plots, has necessitated periodical rearrangement of staff, so that now the full-time services of three field officers and the part time services of three others are devoted to pineapples.

The banana section of the industry has continued to be fairly prosperous. Growers' returns have been good practically throughout the year. This is attributed to reduced production both in Queensland, which now has 12,250 acres, and New South Wales, which has approximately 15,800 acres. Of the Queensland total, 10,080 acres are bearing and produced 553,000 cases last year. The area of new land which has been planted aggregates 1,740 acres, while groves covering 2,750 acres were destroyed because of old age and disease. Realising the amount of banana research work which requires to be done, the Banana Industry Protection Board has set aside one of its field officers for full-time co-operation with the Senior Research Officer at Nambour in fertilizer and other trials in that district.

Citrus-growers had a year of ups and downs. In the coastal districts, where orchardists rely on seasonal rains, there were good spring falls, followed later by a dry spell which caused considerable shedding of fruit. Later, much of the fruit was destroyed by sucking moths and other pests. In irrigation areas, the usual good crops of quality fruit were produced, and the growers are satisfied with results. Prices of citrus fruits are affected by the large quantity of New South Wales citrus sent to Queensland. There is, however, some hope that the embargo of the New Zealand Government may be lifted, which would naturally provide an export outlet. If this happens, much of the New South Wales surplus production will be exported to the Dominion and the local market should improve in consequence.

The strawberry crop was exceptionally big. Factories absorbed the record quantity of 190 tons at 7d. per lb. for canning and 5¼d. per lb. for jam-making. The Sydney market also was further supplied, and 376,558 pint boxes were consigned, as compared with 270,162 pint boxes in the previous year. A local distribution scheme which did much to absorb the surplus was that by which the Committee of Direction of Fruit Marketing arranged to supply 4 lb. boxes of jam berries direct to householders and staffs of local business houses.

Papaw-growers also had a good year. Factories purchased 617 tons of ripe fruit at the very good price of £10 10s. a ton, and 40 tons of green fruit at £8 10s. a ton. When compared with the previous year's figures of 165 tons of ripe and 47½ tons of green fruit, a very big increase in factory requirements is evident. Interstate consignments also showed a considerable increase for the 1938 calendar year, and the total of 27,052 cases was the highest for a number of years, and 12,484 cases more than the 1937 railings to Southern markets.

Considerably greater interest is being taken by fruitgrowers generally in the possibilities of passion fruit production; the quantities of fruit now available are, apparently, at least sufficient to meet present-day demands. Apart from the fresh fruit outlet, factories were able to absorb about 7,000 bags at 6s. a bag for use in fruit salads and drinks.

All indications point to the likelihood of the growing of the Queensland nut becoming an established industry in the future. Several requests for information on the possibilities of purchasing large quantities were received in the course of the year from overseas. There are several hundred acres planted at the present time, but as most of the trees are not yet mature only limited supplies of nuts are available.

The market for avocados also continues to expand, and the area planted with this fruit is increasing annually.

In the course of the year a visit was paid to fruitgrowing districts in northern parts of the State, and an impression gained was of an ever-increasing interest in tropical fruit production. In the Rockhampton district large areas of smooth leaf pineapples have been planted on recommended lines. One area on which test weighings were made was estimated to yield the extraordinary crop of 50 tons to the acre on the first cut. Tomato production in the Bowen district is being placed on sounder lines, as the result of the activity of departmental field officers. Selections of the best varieties are being made and the poorer types eliminated. Pineapples and mango varieties are also being improved, both in this district and further north to Cairns. At the South Johnstone Experiment Station research is being carried on with a number of fruits under the part-time supervision of Mr. S. E. Stephens, Northern Instructor in Fruit Culture. Citrus and grape growing are extending at Charters Towers, as well as in the West. At Hughenden an orchard of citrus and other fruits has been planted on a large scale, and it is intended to increase its size to 3,000 trees. A good water supply is assured, and the first planted trees have grown so well that at eighteen months some have small crops of excellent fruit. Barcaldine, of course, and other parts of the West, where irrigation can be applied, are already renowned for the quality of the citrus and other fruits and vegetables produced.

PLANT INSPECTION.

At an examination under the Diseases in Plants Act held early in the year, more than forty candidates competed for appointment as inspector. Generally, those who presented themselves for examination were exceptionally fine types of men with a first-class knowledge of fruitgrowing, and of whom fourteen were successful in gaining a pass.

LEGISLATION.

The following additions and amendments have been made to:—

(1) *The Diseases in Plants Acts.*—A Proclamation declaring the fruit of the loquat to be a pest in the Warwick district on account of fruit fly.

(2) *The Fruit and Vegetable Acts.*—

  (*a*) Amendment to Regulation 2 to provide a grade standard for bunch bananas.

  (*b*) New grade standards for plums.

(3) *The Banana Industry Protection Act.*—Amendment to Regulations to provide for three-monthly meetings instead of monthly meetings of the Banana Board.

STAFF.

Several transfers and some rearrangements of staff have been made to meet the demand for extra instructional and inspectional work from time to time. Two extra inspectors were placed temporarily in the Stanthorpe district during the fruit season to help control fruit fly attack.

STANTHORPE DISTRICT.

The Senior Instructor in Fruit Culture at Stanthorpe (Mr. H. St. J. Pratt) reports that the season's rainfall, 26 inches, was better distributed than in the previous season, in whch 19 inches were registered. Before Christmas the weather was dry and so affected adversely early stone fruits and vegetables, but after December weather conditions were all that could be desired. Growers were enabled to plant early orchard cover crops, and there are now some splendid stands of peas, rye corn, tares, and wheat in the orchards, which, when ploughed in, will be very beneficial to both soil and trees.

Hail Damage and Insurance.—Some severe losses were sustained from hail damage. In the northern part of the district a hail insurance scheme is operative, but the chief damage this season occurred in the southern area where the growers prefer to carry their own risk. The growers whose orchards were affected worst experienced considerable financial loss. In the northern half of the district about seventy growers will receive the benefit of insurance at the rate of about 2s. a bushel for fruit destroyed.

Apple and Pear Export.—Apple-growers had a remarkably good season. The crop was not so large nor of such good quality as that of the previous year, but prices were well maintained and were influenced by the poor season in some other States. The quantity of fruit available for export was materially less—only 27,502 cases, of which 17,342 were sent to the United Kingdom and 10,160 to Eastern ports—when compared with the previous year's total of 35,370 cases. The decrease shown is 7,868 cases, but in comparing the figures it should be remembered that the 1937-1938 crop was exceptionally heavy and the export for that season was 9,148 cases in excess of the previous one.

Stanthorpe at present cannot supply the demand for export apples, and the fact that some shipments brought the highest price overseas of any exported from the Commonwealth indicates that the quality and get-up of the fruit were good. Packing of fruit for export has been well done, and no difficulty has been experienced in obtaining a net weight of from 42 to 45 lb. of fruit to a bushel case.

An officer of the Federal Department of Commerce was in Stanthorpe during the export season and inspected fruit on the trees, at growers' sheds while being packed, at railway sidings, and also while being loaded into ships at Brisbane. He expressed pleasure at the quality of the fruit, the obvious care being taken by growers in their picking and packing, and the system of inspection practised by field officers.

Grapes.—Due partly to the dry autumn of the previous year, when vines were forced into defoliation and so were unable to fully mature their buds before the winter, the 1938-1939 harvest was only about two-thirds of an average crop. The dry spring and early summer also did not tend to improve the condition of the vines. Prices, however, were the best for some years and compensated for the lighter crop. Damage caused by diseases was very slight, the weather being unfavourable to their spread. No grapes were exported overseas during the past season. After the experiences of previous years growers were not inclined to risk further shipments when prices locally were so good.

Stone Fruits.—There was only a medium crop of stone fruits because of the early dry weather affecting adversely all varieties, particularly in older orchards. The dry conditions also resulted in some varieties of plums failing to grow to large size and necessitated a lenient interpretation of the grade standards.

Brown rot disease was much less in evidence than in previous years, but fruit fly caused rather serious losses, especially in sheltered localities, where early apricots and plums were affected.

The market for carefully selected fruit was firm, and prices were higher than those of the previous season. The harvesting and packing of all stone fruits necessitated very careful attention by growers in order to avoid the inclusion of fly-stung fruit.

Vegetables.—Although early vegetables were a failure, good crops and better prices for later produce more than made up for the early losses. Potatoes, tomatoes, and beans proved to be very profitable as orchard "side lines."

School Packing Instruction.—Packing instruction has been regularly given in schools in fruit-growing districts, and that it is succeeding in its object is shown by the large number and quality of entries in the school packing classes at the Stanthorpe, Summit, and Amiens shows. These three shows provide especially for these classes, and there is keen rivalry among the schools. The qualifying each year of numbers of skilled packers has raised the standard of packing and get-up of the fruit throughout the Stanthorpe district.

Grafting and Reworking of Trees.—As in previous years, officers of the Department have given much time to the instruction of and assistance to growers in the reworking of trees of unprofitable varieties. This activity is much appreciated by the growers. Each year the number of unsuitable varieties is materially decreased.

Fruit Fly.—Fruit fly—Stanthorpe's greatest pest—caused a lot of anxiety; at the end of November and up to the end of December it looked as though the losses from this pest would be extremely severe, but, luckily, from then onward it eased off considerably. Fruit fly was very uneven in its distribution; in some parts of the district growers suffered more severely than for many years, while in other places the losses were practically nil. Growers are invoking the aid of the research staff to control this pest, but they have been enjoined not to overlook the fact that their own carelessness is a cause of a lot of fly infestation. Last season, in several orchards, flies which had migrated from elsewhere were in plague numbers, and had control measures not been immediately applied the growers would probably have lost the whole of their crops, but by using all the controls recommended they were enabled to reduce losses to from 10 to 15 per cent.

Codling Moth.—Codling moth was also rather worse than usual—the aftermath of the previous season's large crop, when growers were not so careful as usual. A large carry-over of overwintering grubs resulted. The Research Division is doing a lot of work in codling moth control, more especially in the timing of sprays, but, here, again, the growers have been enjoined to remember that the remedy is primarily in their own hands and science can do little without the co-operation of growers. The efforts of the Department can be nullified by worn-out spray nozzles, obsolete and ineffective plants (spray), careless spraying, and the storing of codling-affected apples in the sheds for the bag apple trade.

GENERAL.

The season has been a peculiar one. Up to mid-December it seemed as though it would end in serious losses through hailstorms, drought, fruit fly and Rutherglen bug in plague numbers, and codling moth worse than usual, but with good rains at the end of that month the outlook changed. For most growers the season, as a whole, has proved satisfactory, the net returns to the grower being much in excess of those of the previous season. The position of the Stanthorpe growers could be still further improved, however, by the prohibition of the marketing of apples in bags. This trade has increased largely during the last few years, as it is a means for the disposal of diseased and inferior fruit.

BANANAS.

In reviewing the position of the banana section of the industry, the chief inspector of the Banana Industry Protection Board (Mr. H. J. Freeman) and the secretary (Mr. H. G. Crofts) stress the comparatively sound position of the industry at present, but point out also the changing conditions in banana production. In respect of existing areas, four to five years is the average life of commercial plantations under normal conditions. Many plantations must, however, be carefully tended to last so long. Agents of the Board and growers are aware of this and improved cultural and fertilization methods are being applied.

Because of the unavailability of rich jungle land, less fertile scrub and forest country is being planted, consequently more careful cultivation is required.

This is the case with freeholders particularly who desire to make the best use of their land. In the eyes of lessees, the necessity for careful cultivation does not, perhaps, appear so important, because once plantations become uneconomic they can seek new land elsewhere.

Good quality freehold virgin banana land is worth, at present fruit values, from £15 to £20 an acre. Leasehold may be obtained from £2 to £3 an acre. The selection of land for new plantations is becoming more difficult each year, but some of the old land at present covered with lantana offers planting possibilities. It is anticipated, moreover, that some extension will be attempted in the Beaudesert-Canungra district, in the Fernvale area, and in the Dalrymple Heights area west of Rosedale and Lowmead. In recommending any plantings within these localities, temperature and rainfall have been taken carefully into consideration. In some cases definite recommendations against planting have been given.

Of the 1,740 acres of new plantings in Queensland last year, the Nambour district led with 385 acres. Next in order were Beenleigh with 170 acres, and Woodford with 168 acres.

Details:—

District.	Rainfall.	Number of Growers.	Acreage.
	Points.		Acres.
Cairns	124·29	59	205
Bowen	21·70	75	245
Rockhampton	28·99	74	497
Gympie	34·23	319	969
Pomona	60·58	155	997
Yandina	69·96	242	1,267
Nambour	42·00	323	1,280
Woodford	41·04	105	979
Dayboro	41·00	110	764
Brisbane-Redland Bay ..	39·19	269	733
Beenleigh	37·69	249	1,455
Southport	74·81	113	810
Tallebudgera	76·00	112	1,327
Currumbin	84·30	73	724
	..	2,278	12,252

As a comparison, available figures for bananas for New South Wales on 31st May, 1939, are as under:—

	Acres.
Total area	15,808
Area bearing	14,058
Area not yet bearing	1,750
Area eradicated during past 12 months	3,519
Area to be eradicated during forthcoming 12 months	Unknown
Number of growers	2,103

Of commercial varieties, Cavendish still holds first place with 9,792 acres. The Mons Marie acreage is increasing rapidly, being now estimated at 850 acres, as against, approximately, 600 acres last year. The Gros Michel is restricted and it is estimated that, approximately, only 134 acres have been planted with this variety. The Lady Finger holds its popularity as a bunch trade fruit. Although seriously affected by panama disease, it is estimated that approximately 1,238 acres are under this variety. Plantings of this variety within a reasonable distance of the Brisbane market, or a fair country market, will continue, in so far as the land used is nearly all ploughable and so stands green cropping and reworking before replanting. The Redlands and the Beenleigh districts are especially suited for this variety. The acreage under Sugars is estimated at 238 acres, but because of the prevalence of panama disease and beetle borer, the aggregate area remains about stationary even though the demand is always good.

In the Beenleigh district a small dolomite experiment was established in an effort to eliminate panama trouble. Present appearances are encouraging. The amount used is 10 lb. of dolomite to each stool.

Each year some claim is made as to the worth of some variety other than the present commercially recognised varieties, but apart from suiting some special locality or particular taste there is usually little practical result. The Veimama variety is an exception. Reports show this variety, which was imported by the Department from Fiji, to possess all the qualities of the Mons Marie with slightly bigger fruit and, perhaps, a greater resistance to bunchy top. It is expected that more plantings will be made next season.

Green cropping of commercial plantations and old land from which bananas have been eradicated is gaining favour. The value of some leguminous green crops is uncertain, because of the likelihood of destruction by bean fly, but generally field peas have been found to give good results. The practice of turning cover crops into the soil on hillside plantations has presented some difficulty, but it has been found that by permitting the crop to mulch down naturally, and, later, to give the plantation a good chipping, a satisfactory coverage of soil is obtainable.

Pests and diseases have been more or less troublesome during the year. In most districts bunchy top has not been a real cause of worry, although odd plants can always be found in areas where an occasional severe outbreak occurs. Beetle borer is under control in most districts. Thrip and leaf-spot are most difficult to combat, involving in their control additional labour and expense. Fortunately, both troubles are seasonal, and so for a portion of each year the grower is not burdened. Dusting against thrip is effective, and bagging bunches during winter provides shelter while the fruit is maturing, in districts where leaf-spot and leaf-fall is excessive during the cold months.

The practice of covering bunches during winter has extended remarkably in Queensland during the past two years, up to 2,000 covers a day being an ordinary sale for some suppliers during April. Because of its cheapness, brown paper, made up into envelopes of the correct size, has almost entirely replaced hessian covers.

The benefit of breakwinds for banana plantations has been impressed on growers. The planting of suitable trees and plants for this purpose becomes necessary as the natural timber is cleared.

CITRUS FRUITS.

In his report, Mr. R. L. Prest, Instructor in Fruit Culture, states that in districts which depend solely on natural rainfall, citrus trees which blossomed well after the spring rains, subsequently shed much of their fruit in the dry spell in the early summer.

In the Gayndah district, from January onwards, excellent crops of lemons were picked. Good crops of oranges, mandarins and grapefruit are now being marketed from this district.

Conditions for citrus fruit production are particularly bright in the Grantham, Lockyer, and Murphy's Creek districts, where irrigation can be applied.

On the North Coast, replantings have been made with selected trees and varieties. Some are now approaching the bearing stage, and the fruits produced are of good quality and appearance.

In the Howard-Burrum district, medium crops are being picked.

At Tamborine Mountain, the seasonal crop set was a light one, and much out-of-season fruit has since upset normal tree functions.

Pest control in general is receiving attention. While fungi troubles—such as melanose, black spot and brown spot—are present in several districts, seasonal conditions have generally favoured scale pests. Fumigation, where conditions permit, is continuing to gain favour. With the completion of experiments in the use of HCN in relation to copper compound sprays it is expected that improved control in scale and fungi pests will be possible. In practically every district losses because of the depredations of fruit fly and yellow peach moth have been recorded. The green orange bug appears to have been less active.

Experiment Work.—In the Palmwoods district, a demonstration plot with open grassed drains and cultivation across the steepest fall between rows of citrus trees to form tributary drains for carrying surplus waters to the main drains, has shown that in established orchards, where draining on contours is more or less impracticable, such modification materially assists in reducing erosion.

At Tamborine Mountain, the citrus plots demonstrating the reconditioning of decadent orchards are being continued. Pruning, cultivation, green manuring and fertilizing also have been subjects of field demonstration. In plot No. 1 the production of twenty-seven trees, which formed the experimental area, was 178 bushels in 1938, compared with 58 bushels in 1934. In plot No. 2 the 1934 crop yielded 21 bushels from twenty-seven trees, while the 1938 crop amounted to 143 bsuhels.

Robertson Navel Orange Trees.—Robertson Navel orange trees have been imported from California by the Citrus Sectional Group Committee, and handed over to the Department for trial. Only one tree survived, from which buds from the first growth made by this tree have been successfully worked on to seedlings for further propagation.

Citrus Budwood.—During the 1938 season a total of 80,560 citrus buds were selected and distributed to approved nurserymen. It is interesting to record that the most popular demand is for Valencia Late orange (18,500 buds), Washington Navel (14,950 buds), Joppa orange (11,650 buds), Emperor mandarin (10,050 buds), Glen Retreat mandarin (7,200 buds), and Marsh Seedless grapefruit (5,300 buds). Other varieties in order of popularity are: Lisbon lemon (3,850 buds), Villa Franca lemon (2,525 buds), White Siletta orange (2,175 buds), Scarlet mandarin (1,490 buds), Solid Scarlet mandarin (833 buds), Jaffa orange (525 buds), and miscellaneous (1,462 buds). In addition to budwood, 76 lb. of seedling lemon and 56 lb. of seedling sweet orange seed were distributed for root stock purposes. Since 1934, the year of inception of the citrus budwood scheme, more than 350,000 buds have been selected and distributed to nurserymen, and the increase from 51,625 buds in 1934 to 80,560 buds in 1938 is indicative of the appreciation of buyers that, as a consequence of departmental services, they may now purchase trees with confidence in their dependability. The high standard of trees now available has been made possible through the operation of the scheme.

The citrus budwood orchard at Gayndah is making good progress. The recent installation of additional irrigation pipe lines has ensured continuity of growth.

PINEAPPLES.

Mr. P. Mitchell, Plants Inspector, patrolling pineapple plantations from Caboolture district to Nambour, reports that numerous requests have been received from growers for individual instruction and advice on soil treatment, layout of planting, drainage, fertilizing, and general cultural practices. Having been shown by the methods employed by the Department in demonstration plantations the advantage of modern practices, most growers are eager to adopt them. One important result is the confident replanting of former pineapple land which until recently had been regarded as unsuitable for continued production.

The advantages of using paper mulch are being learned, and more is being laid down each year, growers now admitting that apart from conserving soil moisture, about half the cost of the paper is offset by lower weeding costs. Serious consideration is also being given by planters of new areas to the provision of drains to carry away surface water and check soil washing. Methods of planting are also being changed to provide for individual row drainage. The advantage to be gained by plant selection is receiving recognition, and many growers are practising the marking of inferior plants in order to avoid their use for propagation purposes.

No heavy plantings are anticipated this season. The present intermediate crop is realising excellent prices on the Southern market. The winter crop will be good, and spread over a long period—probably from July to late October.

Nambour-Woombye-Palmwoods.—In this district plantations generally are in good order. Results from replanting are very satisfactory.

Montville-Buderim.—Plantations on the Montville Range are chiefly planted on old citrus land. Growers who have followed fertilizing recommendations have obtained good results.

At Buderim there are three large plantations and numerous small areas. Wide planting is still practised and small crops are planted between rows.

Beerwah-Glasshouse.—Plantations generally are in excellent order, being well fertilized and producing good quality fruit. Considerable interest has been evidenced in the departmental demonstration plot in Glasshouse Mountains area. Growers had previously considered old land as useless, but since this plot has been laid out and has proved so successful, several growers have procured large rotary hoes and are turning over old pineapple land for replanting. Large increases in the planting of old land is expected, and, in addition, the use of paper mulch is likely to be considerable.

Beerburrum - Elimbah - Wamuran.—Areas range from good to poor. Fertilizer applications are light and some growers use none at all. Some growers are applying modern cultural methods and, as a result, are supplying fruit of the size and quality required by the canneries.

Experiment and Demonstration Plots.—The Woombye demonstration plot on replant land harvested at the rate of thirty-one tons to the acre. Plots generally are in good order and most farmers are interested in their progress.

During the year assistance was given to the Senior Research Officer (Mr. Lewcock) in laying down a series of experimental trials at Glasshouse for general fertilizing data. An experiment is being conducted at Elimbah on apparent boron deficiency in pineapple plants.

In the Buderim area, a plot was laid down to study the effects of paper mulch in the conservation of soil moisture in volcanic soils, and some remarkably beneficial results have been obtained.

Diseases.—"Top rot" was the principle worry in evidence during the year. In addition, small areas of plants yellowed and wilted down early in the season. The trouble was traced to the heavy rains of May, 1938, which caused temporary soakages and considerable erosion on poorer types of land and on land drained insufficiently.

Water blister is a serious seasonal disease, in respect of which a series of experiments were instituted by Mr. Lewcock, from which results as yet are incomplete.

Sunburn caused considerable losses of fruit during the year.

Mary Valley.—In the Mary Valley, the Field Inspector (Mr. K. D. Hoffmann) advises that plantations are mostly in excellent condition. Growers there also are realising the value of departmental recommendations. It has been shown that cultural methods similar to those employed on demonstration plots result in an extraordinary increase in acreage production.

It has been observed that the number of diseased plants has been minimised, if not checked completely, by effective soil drainage.

Plant selection is being urged upon growers at every opportunity.

Demonstration Plots.—Mary Valley demonstration plots are showing excellent growth, and production figures from 1936 plantings are satisfactory.

The plot at Amamoor covers approximately a third of an acre, and its crop represents roughly 28 tons to the acre. The average weight of each pineapple was 4 lb. 13.4 oz.

The return from the plot at Dagun was at the rate of 24 tons to the acre. The average weight of pineapples was 4 lb. 11.5 oz.

The 1937 plantings produced small summer crops of good average weight fruits from 6 to 8 oz. heavier than those of summer pineapples from the 1936 plantings.

Contour drainage has been provided where necessary.

Diseases.—Wilt and top rot, as may be expected, occur mainly on badly washed slopes and on soils possessing a shallow top-soil, and in the course of instructional work the necessity for drains is continually being pointed out.

The recommended treatment for water blister, combined with careful handling of the fruit at harvesting, has done much to alleviate this trouble.

Enormous losses were caused in the summer crop by sunburn, and the wonder is that the fruit was not covered earlier to avoid this danger.

General.—The excellent prices offering on the fresh fruit market for intermediate pineapples has quickened growers' interest in the acetylene treatment of plants. The industry's prospects at present seem bright, and growers anticipate little difficulty in disposing of the winter crop.

From Caboolture Southwards.—The Field Officer (Mr. C. N. Morgan) also reports favourably on the results in the pineapple areas from Caboolture southwards.

Many plantations were visited in the course of the year, and advice given on various aspects of culture. Some new plantations have been commenced between Brisbane and the Border, and periodical visits have been paid to these. The use of sulphate of iron as a pineapple spray for plants growing on land in which the iron is unavailable is gaining favour, and is being used to an increasingly greater extent by growers in the metropolitan district. The value of the spray is reflected in the marked improvement in vigour and productivity of sprayed plantations. Acetylening of plantations has been done by a number of growers, and the results have proved most profitable in so far that they have been enabled to market their fruit at a time when pineapples are in light supply.

Planting is fairly extensive, although it is not considered excessive, and is indicative of the confidence of growers.

Experiment Work.—Two paper mulch plots at Manly and Moggill, respectively, which were established in November, 1937, have made satisfactory progress and compare favourably with those in the other districts. These plots with their excellent healthy condition have been most helpful in demonstrating to growers the value of the use of paper mulch, sprays where necessary, thorough cultivation, and adequate fertilizing. The plots have started to bear, and the weights of individual fruits are being recorded.

The Manly plot has practically finished half bearing, and the fruit was of fair size and quality. The production of the Manly plot to 31 May, 1939, was as follows:—

—	Number of Fruit.	Total Weight.					Average Weight.	
		T.	C.	Q.	L.	O.	L.	O.
Paper rows ..	2,086	4	3	2	8	6	4	8
Check No. 1 row, no paper ..	396	0	13	0	27	1	3	12
Check No. 2 row, no paper ..	418	0	11	2	25	7	3	2

As approximately half the papered rows have not borne, the total average for the crop after the winter pineapples have been harvested will be high. Considering the fact that the ground on which the Manly plot is established has been under pineapples for approximately 18 years, the results are very satisfactory. The difference between the weights of fruits from the mulched and unmulched rows will probably become more apparent in the first ratoon crop, because of better sucker growth by the plants in the mulch. This also applies to the Moggill plot; No. 2 check row is not in the experiment, and as it receives the same treatment it is used only for comparison.

The Moggill plot being composed of suckers and slips, has so far only borne on the suckers and these are not complete. However, the following are the results to 18 April, 1939:—

SUCKERS.

—	Number of Fruit.	Total Weight.	Average Weight.
		Lb.	Lb. Oz.
Paper rows	1,232	4,431	3 10
No paper rows	153	507	3 5

The slips planted in this plot are bearing very good pineapples, and will give much bigger averages than the suckers.

FRUIT PACKING.

Mr. J. H. Gregory, Instructor in Fruit Packing, had an exceptionally busy year as a consequence of a rapid realisation of the benefits obtainable from proper marketing methods.

The number of packing classes was increased to include trainees in banana-growing districts from Nerang to the Currumbin Valley. Classes are now conducted at the following centres:—Nerang, Mudgeeraba, Upper Mudgeeraba, Tallebudgera, Ingleside, Ridgetop, The Beeches, Currumbin, Maroochy district (9 classes), Gayndah, Howard, Elimbah, Tamborine North, Redland Bay (6 classes), Sunnybank, Rochedale, Upper Brookfield, and Lower Brookfield, making a total of 31 classes. Observation has shown that in the districts where packing instruction is given at schools the standard of marketing has been raised considerably, the parents also benefiting by the information imparted to the children.

Pineapple Factory Investigations.—During the period of supply to the factory of summer pineapples investigations were made in an endeavour to improve packing and handling conditions. A pamphlet on this subject has been published.

Vegetables.—Better methods of marketing vegetables also have received attention. In view of the greatly increased production of beans in North Coast districts and trouble being experienced in transport to Southern markets, it is planned to give attention to the possibility of further improving the methods of vegetable marketing.

Show Exhibits.—Fruit packing exhibits staged at the Nambour show and Royal National show at Brisbane by classes from schools where instruction had been given, were a credit to the children, and emphased the value of this form of education in a primary producing State. Individual pupils also had excellent exhibits at many other country shows. The Fruit Branch also staged a very comprehensive display at the Royal National Exhibition, various phases of fruit production and marketing being displayed.

Publications.—Several revised publications on fruit packing have been reprinted. Additional brochures also have been prepared on marketing cabbages, cauliflowers, sweet potatoes, and other vegetables; also on how to use Queensland fruits.

CENTRAL DISTRICT.

In his report the Senior Instructor in Fruit Culture at Rockhampton, Mr. W. Ross, reports that spring conditions were unfavourable to fruitgrowers, but improved later in the year, and assisted in the production of good average crops, which were marketed at satisfactory prices. Papaw, grape and pineapple acreages have been extended. Papaws are in great demand, while new areas of pineapples have been planted in response to assurances by an established company of its intention to enter the canning field.

The principle exports from the Rockhampton district comprise tomatoes and papaws, of which production reached record figures in the Yarwun and Targinnie districts. General orchard management is progressively improving.

Experiment Work.—The three pineapple plots mentioned in last year's report as having been laid down in different parts of the district are progressing and are proving a valuable educational aid to growers. From one of the plots, a remarkable crop of fruit, estimated to yield 50 tons to the acre, is being harvested. The fruit are all of large size and at a test weighing of picked fruits, averaged 7½ lb. per pineapple.

Of the trial avocado trees planted in the Targinnie district, those that survived are growing well and are being kept under observation.

A small trial plot of tomatoes of a variety catalogued as Burpees Globe was established during the 1938 season. The variety proved to be a strong grower and good cropper of large, firm fruit of good colour. Seeds from selected fruits have been gathered and further and more extensive trials have been laid down.

Bananas.—The acreage under bananas has increased slightly, but as suitable banana land is scarce, it is anticipated that the present aggregate area will not be maintained.

Citrus.—Crops were fair to good, and in some instances heavy, particularly on younger trees, which are continually being planted to replace older trees.

Diseases and Pests.—Diseases and pests were again troublesome during the year, but there is a growing tendency, particularly among younger growers, to apply the control measures recommended, and where this has been done losses have been negligible.

THE BOWEN DISTRICT.

The Bowen district enjoyed the most profitable season for a decade, according to the report of the Field Inspector (Mr. S. F. Kajewski). The shortage of vegetables in Southern States, because of the severe drought, coincided with a record production of tomatoes at Bowen, and high prices were realised throughout the season.

Tomatoes.—Tomato-growing is one of the main source of income, and last season more than 315,000 cases were exported. As is usual with tomatoes in most districts, pests and diseases are prevalent. Notable among these is the tomato mite, but as a result of the work of Research Officer W. J. Sloan, the pest is now largely controllable by the use of lime sulphur. Various kinds of mosaic diseases are present in the district. An experimental plot carried on in co-operation with Mr. Aberdeen, of the Division of Plant Industry (Research), indicated that locally grown varieties are more resistant to wilt than imported kinds.

Pineapples.—A record crop of 21,893 cases of pineapples was marketed at high prices. It has been discovered that, by the use of acetylene, Bowen pineapples can be bought to maturity at a time when the fruit from southern plantations is in light supply. Acting on this, a survey of market prospects has indicated that 40,000 cases may be placed without exceeding requirements. Experiment and demonstration plots at Bowen and Ayr have served useful purposes as indicators to growers just what acreage production the district is capable of under correct methods of cultivation.

Mangoes.—The weather conditions were unfavourable for a large setting of mangoes, and only the comparatively light crop of 14,633 cases was marketed. Unusually high prices, however, more than compensated for the smaller yield. The demand for good fibreless types is becoming so keen that common varieties are only sent away in small lots.

Vegetables.—The weather was not altogether favourable for vegetable growers, only 14,276 bags of pumpkins and 11,330 cases of cucumbers being marketed.

Bananas.—The area under bananas has shown a further decrease, and is likely to decline still further.

Citrus.—Increasing quantities of citrus fruits are being grown. A private order business with Western towns is a profitable outlet.

THE FAR NORTH.

In his report, the Instructor in Fruit Culture at Cairns (Mr. S. E. Stephens) states that in the greater portion of North Queensland dry conditions prevailed during the first six months of the year. The 1939 wet season was a period of heavy rains in all coastal areas. The inland area of Charters Towers, however, did not receive its normal rainfall.

The fruit industry is being maintained at a steady level. Additional plantings have been made and established orchards have, generally, received better attention.

Citrus.—Citrus production continues to maintain its position as the leading branch of the fruit industry of the North. Because of excessively dry weather the Cooktown district had no crop whatever last season. Cairns orchards had a fair crop, which matured rapidly. Generally, the Cardwell crop was light. Navel orange varieties in the district were noted to be ready for harvesting during late January, and other varieties followed in quick succession. Valencia oranges in some orchards were fit to harvest in May. Mandarins were late, and the first Emperors were only marketed during late April and early May. Charters Towers district set a medium crop, but the quality, of oranges especially, is good.

Heavy losses followed attacks of the fruit sucking moth, which is most numerous in wet seasons. Most orchardists resort to hand destruction of the moths at night time, but some growers in the Charters Towers district have been using a lure composed of stale beer, molasses, and sugar, with fairly satisfactory results. Losses from fruit fly have not been as great as in past seasons. Charters Towers growers have, however, found it sufficiently serious for the use of laneyrie poison lure spray, which, they are convinced, is quite efficacious.

Pineapples.—Pineapple-growing is slowly expanding in the North. Magnetic Island is the main source of production at present. Most of the growers on the island have extended their areas during the past year. Planting and culture is mainly along the lines laid down by the department, but slight modifications have been adopted to suit local conditions. The fertilizing programme also has been modified to conform with local crop requirements, with somewhat satisfactory results.

Magnetic Island fruit was largely sent to southern markets this year, good returns being obtained by the growers from both Brisbane and Sydney. The output from the island was approximately 10,000 cases. A large proportion of the crop was of the smooth leaf variety.

The crop in the Cairns district contains a large percentage of poor fruits grown under primitive methods. These have had a depressing effect on the market of that centre.

Some growers on Magnetic Island, and also in the Innisfail district, are making use of acetylene treatment to regulate their pineapple crops. The treatment is effective at all periods of the year in the North, but winter-treated plants usually take about seven months to mature their fruit, as against five to six months for summer-treated plants. The winter-treated fruit is of sound quality, which is contrary to the general experience with winter treatment in Southern Queensland.

Bananas.—There has been very little expansion of banana-growing during the year. No group planting has taken place in any part of the North. The industry is, therefore, small and widely scattered. Notwithstanding the isolation of plantations, leaf spot has this year been very severe.

The Granadilla.—The Granadilla is becoming increasingly popular, and its acreage is expanding. Heavy crops of the fruit were produced during the early part of 1939, but considerable loss was caused by cracking and skin blemishes as a result of the heavy rainfall during that period. Fruit sucking moth also has caused considerable loss in this crop.

Papaws.—Supplies of papaws were good until the commencement of the wet season, when heavy losses through waterlogging of the soil were experienced.

Amblypelta bug was prevalent throughout the early part of the year, but since the onset of the wet season damage from this pest has been greatly reduced.

Mangoes.—A heavy crop of poor, fibrous types of mangoes was carried throughout the Northern district. The better varieties fruited very lightly, however. Mango investigation work has been continued throughout the year, and some progress has been made in the vegetative propagation of the plant; a new method of budding, giving great promise, having been evolved. A tip borer—a moth of the Noctuid family—new to science, has been collected. It attacks mango tip growth. It has been named by Dr. Turner Paperila euthysteita (Turn.).

Grapes.—Charters Towers produced a large crop of grapes this year. The quality was good, particularly that of the muscatel variety. Normally the grape crop from this district is harvested from early December to mid January. This season, however, it was very late and practically no fruit was picked until late in December, so later proportion of the crop clashed with the early crop from Southern Queensland. However, the most of it was sold on the local and Western markets at 6d. to 10d. per lb. for practically the whole output.

Instructional.—Each year growers are availing themselves to a greater extent of the facilities provided by the department for assistance and instruction in various phases of horticulture. Numerous requests for instruction in pruning, propagation, harvesting, packing, and pest control have received attention.

THE WARWICK DISTRICT.

Mr. C. Schindler, Plants Inspector, reports that, although early summer months were dry, good crops of apricots, free from fruit fly, were harvested and sold at good prices. Fruit flies through the summer were very prevalent, but where proper orchard sanitation was practised there was little loss. A plague of army worms in October caused damage to crops in some parts, and where poisoned baits were laid good kills were obtained.

A plot of Brown Beauty bean seed was supervised under the scheme to produce disease-free seed, but, unfortunately, because of the dry weather, the yield was small. As to freedom from disease, however, the plot was a definite improvement and a hand-picked sample germinated 100 per cent.

There are good prospects in the district for greater production of early stone fruits, grapes, and walnuts. Almond and olive trees also bear good crops.

THE TOOWOOMBA DISTRICT.

Hot, dry conditions unfavourable to fruit-growing were experienced during the early summer months, according to the report of the Plants Inspector (Mr. A. M. Richardson). Citrus orchards under irrigation were kept thrifty, but unirrigated areas either failed to set crops or experienced heavy shedding of fruit. Several new orchards of different fruits, including grapes, have been planted, and greater attention has been paid to the suitability of varieties. The increase in market garden crop areas is noteworthy. A remarkably wide range of vegetables is grown in the Toowoomba district.

In the Lockyer, some very good crops of citrus fruits and grapes have been produced, while cabbages and cauliflowers are also now grown on an extensive scale for Brisbane and Toowoomba markets. In the Flagstone Creek area, tomato-growing has become of considerable importance.

During the year, Chinchilla, Miles, Roma, Condamine, Tara, Dalby, and Cecil Plains districts were visited. Further plantings of citrus trees and grapes have been made in these areas. The Tara district, particularly, contains some remarkably good land for citrus and grape growing.

DATE GROWING.

In the Barcaldine district, the date experiment plot is growing satisfactorily, and some of the more advanced palms have borne small crops. Small suckers have been found difficult to establish, and several replacements have been necessary from time to time.

A second experiment plot has been established at Rayford Park, Condamine, with 78 seedling palms germinated from selected Californian seed, and is growing remarkably well.

A number of seedling plants has been distributed to various parts of the State, and a further batch of seedlings of an Egyptian variety (Hayyani), reputed to mature its fruit under humid conditions, will be distributed in the course of the year.

AVOCADOS.

Avocado investigations have been carried further by Mr. R. L. Prest in co-operation with the Senior Research Officer (Mr. Summerville). Blossom studies again indicate the necessity of providing for interpollination of varieties. Studies of varieties also have been continued. Propagation work with several hundred seedlings, the seeds of which were imported, has been commenced at Nambour. Trial plots for root stock, varietal and pollination experiments are being prepared at Woombye and Mapleton.

NURSERIES.

The Inspector of Nurseries (Mr. C. N. Morgan) reports that metropolitan nurseries are generally well conducted, especially in respect of disease control. There are at present 152 registered nurseries.

Vine Root Stock Trials.—In respect of phylloxera-resistant stock for grape vines, the variety 1202 appears to be giving the most satisfactory results in the Pinkenba-Myrtletown area. It seems to grow well under extreme conditions and possesses the advantage of being easier to graft than Rupestris Du Lot. The latter appears to dislike wet conditions, and various plants have died from no other apparent cause. This stock is very difficult to graft, giving poor results even on excellent well-grown plants.

The losses from phylloxera did not appear to be as bad this year, the heavy rains during May and November (1938) probably acting as a check.

Grafted vines on resistant stocks are showing great vigour and are giving excellent crops, but because of the vigorous growth the berries on young vines colour later. However, it is expected that this, in the third or fourth year, will right itself.

One experience with the varieties planted out is that canes planted and allowed to grow in the place where they are to remain give much better vines for grafting than those rooted in the nursery beds and transplanted in the following winter.

FRENCH BEANS.

Fertilizer Experiments.—Experiments with fertilizers for French beans were continued during the year. French bean growing in recent years has been well developed in the North Coast district and the Mary Valley. During the past seaon exports to southern States were valued at nearly £100,000, and the industry is growing annually.

QUEENSLAND NUTS.

Queensland nut-growing gives evry indication of devloping into an industry of considerable importance. In the course of the year several enquiries were received from abroad, chiefly from the United Kingdom, for quite large quantities for commercial purposes, but production has not yet developed to the point at which export can be considered.

PUBLICATIONS.

Regular contributions have been made by officers of the Fruit Branch to the *Queensland Agricultural Journal and Weekly News Bulletin* on subjects of interest to fruitgrowers. Several new publications have been issued and others are in the course of preparation. The Handbook of horticulture, which has been in the course of preparation for some time, is now complete and, it is anticipated, will be issued at an early date.

METROPOLITAN MARKETS.

The Senior Inspector (Mr. A. Person) reports that fruit inspection work at Brisbane was performed in an efficient manner by inspectors at the rail, wharves, and markets. The fruit and produce marketed was, generally, good, and a distinct improvement was evident in the methods of packing and marketing.

Potatoes and onions commanded very high prices during the shortage, and during the lean time of the season potatoes sold for up to £30 per ton, and onions up to £32 per ton. Potatoes from Tasmania, and onions, principally from Egypt, and smaller consignments from Japan, were imported during the year. Condemnations of imported potatoes for the year were light, but local potatoes showed considerable evidence of potato tuber moth. A total of 2,743 bags was condemned, and passed through the picking over shed for treatment. In addition, 1,044 cases and 327 bunches of bananas were rejected for being under grade standards and for other causes, and were destroyed. Fruit fly was very active during the year, and was responsible for more than 1,000 cases of apples having to be picked over. Over 1,000 cases of oranges from other States were also repacked for being unsound Other varieties of fruit condemned were fairly light in comparison with the figures mentioned.

Commerce exports were not heavy, but despite the heavy fruit fly ravages the fruit exported was remarkably free from infestation. Jonathan apples, like all red varieties, showed excellent colour. Other varieties were well matured, Granny Smiths showing up to advantage both as regards maturity and quality.

Inspections under the Quarantine Act were exceedingly heavy during the early part of the year owing to the Customs Department relinquishing the inspection of wooden articles which they had previously carried out. This for a time, overtaxed the ability of the present staff to cope with it, but, following correspondence with the Director-General of Health at Canberra, the inspection of some of the imported articles was decided to be unnecessary, and the amount of extra work imposed on the staff was reduced.

Exports and imports under the Diseases in Plants Act, imports under the Quarantine Act, and exports under the Commerce Act, are tabulated on the following page.

H. BARNES,
Director of Fruit Culture.

INTERSTATE EXPORTS—YEAR ENDED 30TH JUNE, 1939.

——	Bananas.	Passions.	Citrus.	Pines.	Tomatoes.	Straw-berries.	Grapes.	Mangoes.	Egg Fruit.	Various Fruits.
	Cases.	Cases.	Cases.	Cases.	Cases.	Trays.	Cases.	Cases.	Cases.	Cases.
Brisbane	8,401	..	548	18,921	11,041	282	156	7,188	..	7,561
Clapham	243,236	7,165	31,836	441,033	522,179	18,852	8,986	9,496	1,217	50,414
Wallangarra ..	3,257	186	248	2,142	145,784	52	11,052	78	3	21,387
Rockhampton ..	1	138	78	202	705	..	12	..	..	202
Bowen	116	..	..	23,028	401,582	..	..	14,633	..	356
Townsville	..	..	..	5,068	3,488	..	..	1,238	..	938
Cairns	..	..	..	..	..	..	..	..	..	3
Total ..	254,534	7,351	32,632	462,096	679,004	19,186	20,194	16,762	1,220	79,362

——	Melons.	Seed.	Plants.	Nuts.	Cascara.	Pumkins.	Potatoes.	Maize.	Onions.	Peanuts
	Bags.	Bags.	Packages.	Packages.	Packages.	Bags.	Bags.	Bags.	Bags.	Bags.
Brisbane	376	26,811	264	176	28	150,941	20,943	100,694	13,213	98,842
Clapham	3,784	1,807	381	37	..	89,506	9,577	1,655	5,098	455
Wallangarra ..	191	306,286	79	..	..	6,188	8,749	67,116	571	38
Rockhampton ..	..	..	..	..	..	..	..	..	..	..
Bowen	176	..	2	..	28	14,276	326	..	..	..
Townsville	..	..	..	..	..	1,355	..	..	..	..
Cairns	..	7	5	..	..	..	..	80,762	..	6,123
Total .	4,351	334,904	724	213	48	246,635	39,269	169,465	18,882	99,335

	Arrowroot.	Ginger.	Tobacco.	Cocoanuts.	Cane.	Cucumbers.	Chillies.	Vegetables.	Garlic.
	Bags.	Bags.	Bales.	Bags.	Packages.	Cases.	Packages.	Bags.	Bags.
Brisbane	7,700	35	13,658	..	20	5,627	..	9,000	1,276
Clapham	531	152	6	15	6	37,792	738	81,331	..
Wallangarra	..	..	48	..	..	1,593	26	14,800	..
Rockhampton	..	..	..	..	..	4	..	..	..
Bowen	..	..	..	..	..	14,436	..	2,428	..
Townsville	..	..	..	..	..	..	..	..	..
Cairns	..	..	656	..	20	..	..	..	..
Total	8,231	187	13,712	15	26	45,012	764	105,131	1,276

NOTE.—Totals made up of Brisbane, Clapham, and Wallangarra. Northern Exports included in these totals.

INTERSTATE IMPORTS—YEAR ENDED 30TH JUNE, 1939.

——	Fruits.	Potatoes.	Vegetables.	Plants.	Onions.	Nuts.	Swedes.	Seeds.	Tobacco.	Citrus.	Cherries.	Grapes.
	Cases.	Bags.	Bags.	Packages.	Bags.	Bags.	Bags.	Packages.	Packages.	Cases.	Trays.	Cases.
Brisbane	679,414	197,526	14,939	409	78,625	227	10,600	99	..	..	..	..
Clapham	134,016	227,444	8,777	431	262	30	35	1,107	..	109,420	24,389	918
Wallangarra ..	108,384	23,946	490	649	3,980	..	..	13,505	11	1,203	..	..
Rockhampton ..	7,034	14,711	1,128	25	6,914	35	..	..	..	..	..	..
Bowen	7,602	2,792	1,721	9	855	6	8	51	..	..	..	..
Townsville	45,406	33,581	1,131	66	13,795	196	847	..	..	..	..	..
Cairns	41,258	19,701	2,765	6	7,250	16	92	99	..	..	..	..
Totals ..	921,814	448,916	19,206	1.489	82,867	257	10,635	14,711	11	110.623	24,389	918

NOTE.—Totals made up of Brisbane, Clapham, and Wallangarra. Northern Imports included in these totals.

IMPORTS UNDER QUARANTINE ACT, 1938-39.

Tanning Products.	Cotton Seed.	Tapioca.	Coffee.	Spices.	Nutmeg.	Ginger.	Dates.	Tamarinds.	Rice.	Onions.
Packages.	Bags.	Bags.	Bags.	Packages.	Cases.	Packages.	Packages.	Packages.	Packages.	Bags.
2,557	59,623	7,658	1,396	252	390	659	18,349	22	9,644	6,639

Lentils.	Various Seed.	White Beans.	Plants.	Desiccated Cocoanut.	Nuts.	Chinese Goods.	Pepper.	Agricultural Beans.	Cocoa Beans.	Cocoanuts.
Packages.	Packages.	Bags.	Packages.	Packages.	Packages.	Packages.	Bags.	Packages.	Bags.	Bags.
101	3,053	3,470	135	2,819	1,853	946	1,279	418	160	513

Figs.	Citrus.	Copra.	Buttons.	Curios.	Herbs.	Linseed.	Basket Ware.	Rattans.	Bamboo Rakes.	Tea Chest
Packages.	Cases.	Bags.	Packages.		Packages.	Bags.	Packages.	Bundles.	Packages.	
2,030	623	2	10	43	71	253	1,656	3,014	742	17,262

Sporting Goods.	Sundry Furniture.	Wooden Articles.	Bamboo Skewers.	Handled Tools.	Cane. Blinds.	Hay.	Fans.	Kegs.	Timber.	Willows.
Packages.	Pieces.		Bundles.	Packages.	Packages.	Bales.	Packages.		Super. Feet.	Bundles.
107	2,184	217	30	2,221	609	319	500	974	11,419	2

Timber.	Timber.	Staves.	Logs.	Cigar Timber.	Motor Launch.	Sewing Machine.	Box Shooks.	Feed Boxes.	Door Stocks.
Bundles.	Pieces.			Bundles.		Parts.	Bundles.		
560	59,779	942,373	2,211	4	1	398	351	12	730

EXPORTS UNDER COMMERCE ACT, 1938-39.

Fruit.	Plants.	Potatoes.	Onions.	Seed.	Garlic.	Vegetables.	Peanuts.
28,891 cases.	63 packages.	584 bags.	396 bags.	589 packages.	597 bags.	392 bags.	5 bags.

A. PERSON, Senior Inspector, Diseases in Plants Acts.

REPORT OF THE DIRECTOR OF DAIRYING.

The past season has been an excellent one for the dairy industry, and record production figures in both butter and cheese were established. Early in the season, considerable weed trouble was experienced and resulted in much butter, which was otherwise of good quality, being de-graded. This undoubtedly prevented a record in the quantity of choice butter also being attained. As there is evidence that the weed menace is spreading to areas previously more or less free, this problem must be given serious consideration. Some outbreaks of ephemeral fever were reported and the fact that practically only young stock were affected gives farmers the hope that they will not again experience the losses as heavy as those which followed the original outbreak of this sickness.

A new factory capable of meeting the needs of the district for some years to come was completed at Malanda in the course of the year. New factory buildings are in course of erection at Maleny, Miles, and Inglewood.

It was found that the equipment at many factories was inadequate to cope with increased production, and this led to the installation of much additional equipment.

Numerous improvements, including a number of entirely new factory buildings, marked the year in the cheese industry.

Many substantial modern buildings also have been erected on dairy farms in most of the dairying districts.

Success again crowned the entries from Queensland factories in Australian and overseas competitions.

BUTTER QUALITY.

Because of abnormal weed growth early in the season the percentage of choice butter did not reach the figure anticipated, but over the whole year the output was fairly satisfactory, except in the Central Division.

Little or no difficulty has been experienced by the Butter Board in providing the local market with choice butter. All butter sold on the metropolitan market is tested for composition and quality by the grading inspectors of this Branch prior to being patted.

BUTTER PRODUCTION.

The actual butter production for the year was 154,377, 535 lb.—a record for the State.

The following table shows the monthly production during the period:—

BUTTER PRODUCTION, 1938-39.

	lb.
1938—	
July	9,082,899
August	9,990,450
September	10,595,340
October	12,325,436
November	15,449,045
December	15,897,777
1939—	
January	12,199,968
February	15,365,622
March	17,097,223
April	14,247,636
May	12,610,339
June	9,596,800
Total	154,377,535

MARKETS.

Queensland exported approximately 76 per cent. of its output, most of which went to Great Britain. Approximately 3 per cent. was sold interstate.

GRADING OF BUTTER.

The following table, which indicates the quality of the butter graded, has been received from the Commonwealth Dairy Branch:—

BUTTER, SALTED AND UNSALTED.

Butter Graded for Export—including pats and tins.

Month.	Choicest boxes.	First boxes.	Second boxes.	Pastry_boxes.	Total boxes.
1938.					
July	70,160	34,207	7,502	1,134	113,003
August	55,839	43,501	11,641	741	111,722
September	58,351	79,841	22,029	1,780	162,001
October	76,387	56,342	14,010	413	147,152
November	109,747	73,282	18,246	3,957	205,232
December	151,550	122,659	28,574	892	303,675
1939.					
January	67,311	72,997	23,236	858	164,402
February	89,764	94,051	21,821	1,096	206,732
March	131,208	116,723	35,192	2,820	285,943
April	121,854	70,792	20,357	1,230	214,233
May	134,852	66,075	15,838	1,110	217,875
June	85,086	32,582	6,513	450	124,631
Grand Total	1,152,109	863,052	224,959	16,481	2,256,601
Per cent.	51·06	38·24	9·97	0·73	..

CHEESE PRODUCTION.

The actual production of cheese was 15,749,103 lb. for the year, an increase of 2,778,498 lb. over the previous year. A slight improvement in the quality was noticed. Cheese makers were hampered because of remodelling and reconstruction work in the course of the year at most of the cheese factories.

The following table shows the monthly production of cheese during the period:—

CHEESE PRODUCTION, 1938-39.

	lb.
1938—	
July	1,088,274
August	1,252,126
September	1,344,665
October	1,317,294
November	1,453,385
December	1,515,357
1939—	
January	1,195,155
February	1,358,145
March	1,528,218
April	1,313,683
May	1,289,800
June	1,093,001
Total	15,749,103

CHEESE GRADED FOR EXPORT.

The following table, received from the Commonwealth Dairy Branch, indicates the quality of the cheese graded:—

Month.	Choicest.	First.	Second & Third.	Total.
1938.	Lb.	Lb.	Lb.	Lb.
July	1,598	63,906	234,738	300,242
August	17,265	273,664	314,303	605,232
September	28,075	509,771	416,415	954,261
October	34,287	427,264	394,506	856,057
November	10,558	336,164	498,028	844,750
December	40,699	544,599	683,336	1,268,634
1939.				
January	28,103	321,361	551,894	901,358
February	3,319	186,313	528,145	717,777
March	26,105	289,046	699,849	1,015,000
April	31,869	225,846	698,000	955,715
May	31,403	349,468	499,988	880,859
June	14,045	238,042	396,309	648,396
Grand Total	267,326	3,765,444	5,915,511	9,948,281
Per cent.	2·69	3·85	59·46	..

NOTE.—Processed cheese and cheese packed in jars or tins not included in this table.

QUALITY OF CREAM.

As already stated, considerable weed trouble was experienced early in the season and resulted in much cream which was otherwise good being de-graded. Later the quality improved.

Additional cream routes have been gazetted to provide more efficient transport of cream to factories.

REBATE SCHEME.

Rebates of railway freights, which are allowed to dairy farmers who purchase young bulls whose dams have qualified for entry into the advanced register of the several herd books were again granted during the year. This dairy cattle improvement rebate scheme has been of much assistance to farmers desirous of improving the production of their herds. Purchasers numbering 67 benefited to the extent of £261 4s. 7d. by way of rebates.

PURE-BRED PRODUCTION RECORDING.

Testing of cows for the advanced register of the various herd books was continued and breeders showed commendable enthusiasm in this connection. A total of 357 animals was successful in qualifying, and this was an increase of 174 over the previous year.

GRADE PRODUCTION RECORDING.

The good season experienced was no doubt the chief cause of the increase in the number of herds submitted, which was 353. This was an increase of 100 herds over the number submitted during the previous year. An increase in the average production per cow was also noted.

It is difficult to understand why dairy farmers do not give greater attention to production recording, particularly as this service is free. If the dairying industry is to retain its position, dairy farmers must improve the average production of their herds, and this cannot be done unless the herds are tested regularly and unprofitable animals culled.

Factory Records.

The report of the Inspector of Factory Accounts shows that butter manufacture costs were maintained at an even level, and the average pay per pound of commercial butter was 13·51d., which was an increase of 1·32d. over that of the previous year.

Veterinary Section.

Veterinary officers are stationed in the principal dairying districts of the State. These officers are primarily concerned with the health of dairy cattle and carry out testing under the tubercle-free and contagious abortion-free herd schemes. Their services have been in great demand by dairy farmers, who are now paying greater attention to this section of animal husbandry.

In appended staff reports are details of the work of the Dairy Branch during the year.

G. H. E. HEERS,
Director of Dairying.

STAFF REPORTS.

(1) DAIRY RESEARCH.

The work of the Dairy Research Laboratory has been of practical assistance to the dairy industry in many ways. Visits to farms and factories have been made and laboratory work has been carried out in collaboration with farmers, factory men, departmental field staff, Commonwealth dairy officers, the Queensland Butter Board, the Cheese Board, the Brisbane Milk Board, and the Council for Scientific and Industrial Research.

Farm Problems.—Many dairymen in parts of the State have been assisted with matters relating to milk, cream, water, and other farm products. The cooling of milk and cream is still an important farm problem and there is urgent need for a cheap mechanical refrigerator for use on farms in Queensland. Lack of cooling and non-sterile utensils were factors responsible for many of the defects observed in samples of milk and cream examined. Useful advice to farmers has been given by officers stationed at Toowoomba during their work in the cheese improvement campaign. Farmers in the metropolitan area also have been greatly assisted by the work of the bacteriologist of the Brisbane Milk Board who is attached to the Dairy Research Laboratory.

Butter.—Many samples of butter were examined in the laboratory for chemical and bacteriological properties, and there were again indications that factory men are giving more attention to churn sanitation, neutralisation methods, water treatment, standard composition, and other factory procedures necessary for the production of high quality butter. Butter factory surveys were continued and advice tendered to factories as a result of investigations made. Work has been done for the Queensland Butter Board on butter supplied to the metropolitan area. This work will be continued throughout the coming year and should assist the Board in maintaining the quality of the butter at a high and uniform standard. This work has also involved a study of the factors influencing the suitability of butter for the "pat" trade.

In the course of the year, eight samples of Queensland butter were sent to New Zealand for some special research on flavour, and very favourable reports were received on Queensland butters. It was pleasing to note that two of the most northern factories—Daintree River and Malanda—were among those which received the most favourable comment.

Butter Standardisation.—The butter standardisation service which was instituted last year has been continued under the direction of Mr. Burgess, and the results of the work to date have been issued in seven quarterly reports. The participating factories have shown keenness in their work, with the result that they are now producing butter of more economic and uniform composition. One thousand two hundred and eight samples of butter have been examined, and visits have been made to the factories to assist them in their work. The results of one of the factories for the last quarter show the average composition of 46 churns of butter to be as follows:—Fat, 82·21 per cent.; water, 15·66 per cent.; salt, 1·41 per cent.; curd, 0·72 per cent.; and the keeping quality test showed that 98 per cent. of the butters were very satisfactory. This is an excellent record and an indication of what can be done.

Factory Water Supplies.—Visits have been made to butter factories to examine water supplies and investigate conditions under which water is used and stored. Chemical and bacteriological examinations have been made and methods of treatment suggested to the factory managements. Many of the factories are now treating water by processes involving coagulation, sedimentation, chlorination and filtration. The ultra-violet light treatment which was employed by one factory last year has been abandoned and replaced by the chlorination process. Examinations of butter from different factories have revealed that factories with a properly treated water supply suffer fewer troubles than factories where the water supply is not suitably treated or stored. This work will be continued until all factories in the State have water supplies above suspicion.

Cheese.—The cheese industry received a considerable amount of attention from laboratory officers stationed at Toowoomba. A travelling field laboratory for research work on cheese was put on the road early in the year, and has done valuable work for the cheese industry. This unit visited the cheese factories where the milk supply was subjected to numerous tests, following which visits to the farms were made and advice given concerning methods of improving quality of milk for cheese manufacture.

In the drive for better cheese, there has been much activity in the rebuilding and rehabilitation of cheese factories. Some factories are being completely rebuilt, while others are rectifying existing weaknesses and thus becoming more suitable for production of cheese under Queensland conditions. Laboratory work on cheese has been carried out both at Toowoomba and Brisbane. Lactic cultures have been sent to cheese factories from the Brisbane laboratory; altogether 252 lactic cultures were distributed to 20 different factories. Vitality and quality tests are made on these cultures every week in the Brisbane laboratory. These cultures have proved very successful.

Officers of this laboratory also collaborated with officers of the Railway Department in regard to better transport facilities for cheese. Investigations of conditions of transport were made, experiments carried out, and suggestions offered for better services. As a result, conditions have been improved.

The beneficial result of all the activity which has been and is still being directed towards better quality cheese, should be felt throughout the coming year. Already there has been an improvement, but it is believed that a much better quality cheese will be produced in future.

Experiments on the waxing of cheese with a special wax were supervised, and it was found that shrinkage from loss of moisture was greatly reduced by coating with wax. The quality of the cheese was not impaired in any way.

Extension Work.—Two dairy schools were held in the cheese districts of Pittsworth and Moola. The schools were well attended by farmers and cheese factory men. The course of instruction dealt with the handling of milk at farm and factory, together with the elementary chemistry and bacteriology of milk production and cheese manufacture. The schools formed part of the plan in the campaign for better cheese.

Contributions to *The Queensland Agricultural Journal* and *Weekly News Bulletin* have been made regularly by members of the staff.

The laboratory staged an instructive exhibit at the Royal National Show, the main feature being the production of high quality milk.

O. St. J. KENT,
Senior Dairy Technologist.

(2) FACTORY ACCOUNTS.

The principal duties performed during the year have been in connection with cream transport. The system of control and operation has been altered by an amendment to the relevant legislation and the necessary adjustments are being undertaken.

Various centres of the State have been visited and meetings of farmers addressed on the subject of cream quality and measures necessary to improve it.

Some inspections and audits of accounts have been necessary in respect of the drought relief scheme.

Inspections of books of dairy associations have been made in special cases.

Factory balance-sheets revealed that costs had been maintained at an even level, but the average rate of pay per lb. for the State had increased. Based on all grades over all factories operating in Queensland, it was 13·51d.—an increase of 1·32d. on the previous year.

The statistical records of the Dairy Branch have been re-organised and full and complete details of the operations of each factory are readily available.

Enquiries on the economic aspects of proposals for the erection of new butter factories have been undertaken. The requirements necessary for the alterations to cheese factories were furnished and records of work performed and yet to be undertaken have been kept.

Particulars of the improvements necessary to roads leading to cheese factories have been prepared and forwarded to the Co-ordinator-General. A special conference between the representatives of Queensland and New South Wales factories held at Byron Bay was attended and the case for Queensland in regard to pays in factories and the quality of dairy produce presented.

G. B. GALLWEY,
Inspector of Accounts.

(3) HERD RECORDING.

Herd recording during the year 1938-39 has improved considerably, not only in the number of herds submitted, but also in the average production per cow.

An excellent season has been experienced and this, no doubt, is responsible for the increased support from dairy farmers to the Herd Recording Scheme.

Although no records have been established, the number of herds submitted is the best for some years, while the average production per cow—160 lb. butter-fat—is almost equal to the highest average yield—161 lb.—recorded in 1933-34.

The number of herds submitted from all parts of the State was 353, an increase of 100 herds. The number of cows submitted, 12,651, shows an increase of 4,556, and the actual number of tests carried out was 33,002 as compared with 18,424 for last year.

Herds were submitted from all dairying districts in the State—from the southern border to the extreme northern district of Daintree.

Divided into large districts, herds were submitted as follows:—

	No. Herds.	No. Cows.
Darling Downs	53	1,505
Moreton	86	3,539
Wide Bay	54	1,813
Burnett	62	2,471
Central	60	1,812
North Queensland	38	1,511
Total	353	12,651

A notable increase is shown in the number of production records computed during the year, the number being 5,045 as against 1,909 last season; and the average production is calculated as 160 lb. butter-fat as against 148 lb. butter-fat per cow last year.

As usual, the Darling Downs district leads in production, with a yield of 195 lb. butter-fat per cow; and this is actually the highest average production recorded on the Downs, the previous highest being 186 lb. butter-fat during the year 1933-34.

The second highest average production is recorded from North Queensland. A total of 38 herds were submitted, with an average of 172 lb. per cow.

An almost equal production is recorded from the Burnett District, where 62 herds were submitted with a, total of 2,471 cows; of these records were computed of 1,135 cows, showing an average production of 171 lb. butter-fat per cow.

All districts show a corresponding increase, no doubt reflecting the good season experienced during the year.

Coming to individual herds, the highest average production recorded is 296 lb. butter-fat per cow from 17 cows; while another herd of 44 cows shows a production of 262 lb. butter-fat per cow. Both of these are from the Burnett. Another good production is noted from a herd on the Mary River, viz., 245 lb. per cow, from a herd of 31 cows. That dairying may also be carried out profitably in the West is indicated from the returns computed of a herd in the Injune district. Returns from this herd show individual yields such as 314, 312, and 259 lb. butter-fat, while the average production of 20 cows was 212 lb. butter-fat.

The highest individual yield, both of milk and butter-fat, was produced by a cow on the Downs; the milk yield was computed as 10,904 lb., with a production of 440 lb. butter-fat. This cow comes from a herd which has been tested almost without interruption over a period of 15 years, and it is interesting to note that our records for 1935-36 credits this animal, as a young cow, with a production of 375 lb. butter-fat, indicating a good, consistent dairy cow.

Other cows from this herd show yields such as 371, 351, 341, and 340 lb. butter-fat, while 16 cows of the herd completing their lactation during the year show an average production of 287 lb. butter-fat

A summary of all production records has been tabulated, into which all cows have been grouped according to their production of butter-fat. From this it will be seen that two cows, only, passed the 400 lb. mark; 17 cows produced from 350 to 400 lb.; 73 produced from 300 to 350 lb.; 232 from 250 to 300 lb.; 691 from 200 to 250 lb.; 1,640 from 150 to 200 lb.; while 1,877 produced from 100 to 150 lb., and 513 failed to reach the 100 lb. mark.

It is to be regretted that we have cows in the category of less than 100 lb. butter-fat, but each year brings forth a certain percentage. Herd recording is the only way to eliminate this class of cow. The average test of all records computed (5,045) was 4·26 per cent. butter-fat.

During the year, most of the testing has been carried out at headquarters, but assistance has been given by a few dairy associations, viz., Beaudesert, Kingston, Warwick, Killarney, and Downs Co-operative Association, in the south; in the north, assistance has been rendered by Atherton, Millaa Millaa, Ravenshoe, and Daintree Dairy Associations. Departmental inspectors in some districts have also assisted by carrying out the testing of herds submitted in their respective districts.

The production records have, with the exception of Atherton district, been computed by the herd recording staff at headquarters. More than 100,000 calculations have been carried out in connection with the herd recording scheme during the year.

Although the herd recording scheme is not availed of to the extent which may be expected from a service rendered free by the Department, it is quite evident from correspondence that dairy farmers do appreciate the work carried out by the Dairy Branch; and this is also borne out by the fact that many farmers have kept their herd under test continuously for periods of five to eight years.

L. F. ANDERSEN,
Dairy Instructor.

SUMMARY OF GRADE HERD RECORDING.

YEAR, 1938-39.

District.	Number of Herds Tested.	Number of Cows Tested.	Number of Samples Tested.	Production Returns Computed.	Average Yield of Milk.	Average Yield of Butter-fat	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding 400 and over Butter-fat.
				Lb.	Lb.	Lb.								
Darling Downs	53	1,505	3,456	343	4,768	195	16	67	108	94	36	17	4	1
Moreton	86	3,539	9,503	1,399	3,598	147	187	623	418	126	32	8	4	1
Wide Bay	54	1,813	4,984	761	3,369	157	107	252	236	129	28	8	1	..
Burnett	62	2,471	6,652	1,135	4,154	171	64	391	395	177	76	25	7	..
Central	60	1,812	4,506	754	3,222	144	115	355	201	45	28	9	1	..
North Queensland	38	1,511	3,901	653	3,943	172	24	189	282	120	32	6	..	..
Total	353	12,651	33,002	5,045	..	..	513	1,877	1,640	691	232	73	17	2
General Average ..	..	..	..	..	3,757	160	10·168 per cent.	37·205 per cent.	32·507 per cent.	13·696 per cent.	4,598 per cent.	1·446 per cent.	0·336 per cent.	0·040 per cent.

HERD RECORDING, 1938-39.

DARLING DOWNS.

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding 400 lb. and over Butter-fat.
					Lb.	Lb.								
Toowoomba	6	169	497	32	4,399	196	..	6	13	8	4	1	..	..
Oakey	4	104	354	79	5,749	225	2	4	24	22	15	8	3	1
Pittsworth	3	98	249	34	4,830	215	..	5	10	11	5	2	1	..
Dalby	10	316	557	28	5,018	193	..	5	12	10	1	..	..	..
Western Darling Downs	9	313	743	100	4,398	182	3	28	30	30	7	2	..	..
Warwick	17	428	864	61	4,175	169	11	16	16	10	4	4	..	..
Killarney	4	77	192	9	4,608	176	..	3	3	3	..	..	..	..
Total	53	1,505	3,456	343	..	..	16	67	108	94	36	17	4	1
Average	..	..	..	..	4,768	195	..	..	..	..	..	..	..	..

MORETON.

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding 400 lb. and over Butter-fat.
South Coast	16	778	2,036	419	3,267	135	73	230	88	17	8	1	1	1
Beaudesert	15	845	2,518	352	3,294	136	63	172	98	16	3	..	..	..
Brisbane Valley	15	790	2,178	346	4,282	170	9	113	149	57	11	5	2	..
Dayboro'-Brookfield	10	333	797	39	3,670	157	8	12	11	4	2	1	1	..
Lockyer	17	321	670	129	3,481	147	21	50	37	18	2	1	..	..
Rosewood	9	303	858	91	3,839	161	8	33	30	14	6	..	..	..
Boonah	4	169	446	23	3,563	128	5	13	5	..	..	..	..	..
Total	86	3,539	9,503	1,399	..	..	187	623	418	126	32	8	4	1
Average	..	..	..	..	3,598	147	..	..	..	..	..	..	..	..

HERD RECORDING, 1938-39—*continued*

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding 400 lb. and over Butter-fat.
					Lb.	Lb.								
WIDE BAY.														
Stanley River	13	576	1,413	162	3,575	167	20	41	54	39	8	..	..	..
Malaney	9	284	894	143	3,110	144	21	58	51	12	1	..	..	..
North Coast	13	350	911	136	3,504	157	36	29	28	35	6	2	..	..
Gympie-Theebine	19	603	1,766	320	3,323	159	30	124	103	43	13	6	1	..
Total	54	1,813	4,984	761	..	..	107	252	236	129	28	8	1	..
Average	..	..	..	..	3,369	157	..	..	..	..	..	..	..	..
BURNETT.														
Goomeri-Murgon-Proston	15	648	1,744	294	4,233	185	10	86	106	44	27	16	5	..
Kingaroy-Goodger-Nanango ..	11	498	1,490	239	5,016	196	9	40	77	73	33	6	1	..
Gayndah	13	609	1,558	270	3,944	159	11	104	121	26	7	1	..	..
Mundubbera	11	339	822	169	4,010	165	6	74	50	29	7	2	1	..
Monto	12	377	1,038	163	3,245	135	28	87	41	5	2	..	..	..
Total	62	2,471	6,652	1,135	..	..	64	391	395	177	76	25	7	..
Average	..	..	..	..	4,154	171	..	..	..	..	..	..	..	..
CENTRAL QUEENSLAND.														
Bundaberg-Gladstone	13	465	1,116	187	2,819	127	31	116	35	5	..	..	..	..
Rockhampton	10	220	643	150	2,657	122	35	88	26	1	..	..	..	..
Biloela	19	696	1,567	209	3,810	174	19	63	73	22	23	8	1	..
Wowan	7	196	196	66	3,087	120	24	30	7	5	..	..	..	..
Mackay	11	325	984	142	3,548	159	6	58	60	12	5	1	..	..
Total	60	1,812	4,506	754	..	..	115	355	201	45	28	9	1	..
Average	..	..	..	..	3,222	144	..	..	..	..	..	..	..	..
NORTH QUEENSLAND.														
Atherton and Evelyn Tablelands ..	29	1,152	3,052	484	4,044	174	12	141	209	89	27	6	..	..
Daintree	9	359	849	169	3,653	164	12	48	73	31	5	..	..	..
Total	38	1,511	3,901	653	..	..	24	189	282	120	32	6	..	..
Average	..	..	..	..	3,943	172	..	..	..	..	..	..	..	..

REPORT OF THE SENIOR INSTRUCTOR IN PIG RAISING.

The year has been remarkable for accelerated progress in the pig and bacon trades. Probably, in no other similar period have conditions improved so rapidly. Prices have been maintained on a more stable and satisfactory basis than in previous years.

Widespread beneficial rains and temperate weather conditions have favoured heavy growth of all fodder crops.

A further extension of the paddock system of pig-keeping has resulted in healthier stock, as observed on slaughter of animals at bacon factories and meatworks.

Extension of instructional activities in co-operation with the field staffs of other branches of the Department has been of general benefit to the industry. The correspondence course of instruction has been continued with success.

The school of instruction in pig-raising early in the year also was successful; likewise a similar school for farmers at the Queensland Agricultural High School and College which closed on 27th June.

A special conference of instructors in pig-raising and other officers specialising in this branch of husbandry, arranged through the Australian Meat Board, was held at Melbourne in September, at which the Department was represented.

Trade in Pig Farm Products.—Consequent on the increase in the number of pigs on farms in Queensland, there has been a considerable expansion in the export trade in pig products with the United Kingdom, and a steady development of the Eastern and interstate trade.

There has been a steady improvement in the quality of pork and bacon pigs marketed and in the store pig and stud pig trades.

The pig industry in the Mackay District, and in the Central Division generally, has made a remarkable advance.

The Northern Pig Board and the North Queensland Co-operative Bacon Association continue to exercise an important function in the marketing of pigs in the Far North, where there is a wide field for further expansion of the industry.

Slaughterings.—Slaughtering figures for the nine months ended 31st March, 1939, compared with the corresponding period of 1938, are as follows:—

Pigs Slaughtered at Queensland Bacon Factories.

Year	State Trade	Export	Total
1938	193,164	22,545	215,709
1939	222,300	33,925	256,225

Present seasonal conditions indicate the continuance of a favourable winter; and a good spring is anticipated.

Publications.—Inquiry for Departmental publications on pig-raising, of which a comprehensive range has been made available, has increased in volume. *The Queensland Agricultural Journal* and the *Weekly News Bulletin* have been supplied regularly with contributions on pig husbandry and economy.

E. J. SHELTON,
Senior Instructor in Pig Raising.

STAFF REPORT.

Mr. L. A. Downey, Instructor in Pig Raising, reported (2nd March) that special attention had been given to the development of pig-carcase appraisal as a means of keeping the pig industry informed as to trade requirements, with particular reference to the markets of the United Kingdom.

The all-Australian export pig competitions again received the full support of the Department, and largely through its efforts there was a substantial Queensland entry in the last two competitions. Queensland competitors also were well represented among the prize winners.

The export baconer class at the Brisbane Royal Show was again judged on live pig and carcase standards. The full results with measurements, marks, and photographs of the live pigs, their carcases, and their cuts were contained in a comprehensive report which was published in the October issue of the *Queensland Agricultural Journal.*

In co-operation with the Queensland Pig Industry Committee, a new service of pig-carcase appraisal has been introduced. This scheme provides facilities for a farmer to have any particular pig which he nominates appraised after slaughter, and for him to receive a detailed report of its carcase quality. Such a service should be valuable to stud pig breeders and others who require definite advice on the carcase quality of representative pigs as a breeding and feeding guide.

It is probable that breeders and show judges will, from now onwards, place greater stress on body length of pigs than has ever been done previously.

The system of recording on cards, visits to each farm, factory, and saleyard, which was commenced last June, has been continued and has further proved its value.

REPORT OF THE POULTRY EXPERT.

During the year the poultry industry expanded considerably. This expansion cannot be measured exactly by egg production, as many of the birds reared are only commencing to lay. Queensland Egg Board figures illustrate this condition in the industry. For the five months ended May, 1938, eggs received by the Board aggregated 1,321,083 dozen, and for the corresponding period of 1939 1,501,854 dozen—an increase of 13·6 per cent. During June, 1938, the Board received 193,456 dozen, and for the corresponding period of 1939, 260,624 dozen—an increase of 34 per cent. Collectively, the increase in production for the first six months of 1939 was 16·4 per cent. It is expected that the actual increase in the industry for the coming year will be much greater than the percentages shown. Increased production has been the experience throughout the State. The higher values which ruled before the beginning of the present year and the easing of fodder charges have been largely the reason for the buoyancy in the industry.

Export.—During 1938 the Egg Board handled 4,529,846 dozen eggs, and of this quantity 1,234,380 dozen were exported overseas—a decrease in export for the year of over 600,000 dozen as compared with 1937. With the higher production expected during the coming export period, it is anticipated that, if the export figures of 1937 are not exceded, they will at least be equalled.

Returns from the export trade during 1938 were not sufficient to cover expenses on the advances made to producers, with the result that a loss of approximately £5,000 was incurred. Actually, this amount is not regarded as a loss, but merely an overpayment to suppliers.

Egg Quality.—The quality of Queensland eggs is commented on very favourably by overseas buyers; in fact, it is difficult to recall any instance of buyers of Queensland eggs in Great Britain making any adverse comment on the quality of egg shipments from this State. Packing has, at times, been criticised, but the method now adopted leaves very little scope, if any, for improvement.

Egg Values.—Early in the financial year egg values showed an improvement as compared with values at the corresponding period of the previous year, but later in the season declined sharply. A heat wave in other States caused a sharp increase in prices during February, but supplies soon increased, with the consequence of a sharp decline in March. Values for the first six months of 1939 have been, on the whole, considerably lower than for the corresponding period last year.

Fodder Prices.—The following table of the average retail costs of fodder in Brisbane discloses that values are closely approaching the values for the peak year of the industry—1935. This position will have a material influence on the expansion of the industry. Low fodder values, however, often lead to the retention of undesirable birds, and may become an incentive to some people to engage in poultry-raising who may not be familiar with the demands of economic production:—

AVERAGE RETAIL COST OF FODDER—BRISBANE.

Period.	Maize. Per bushel.	Wheat. Per bushel.	Pollard. Per 100 lb.	Bran. Per 100 lb.
	s. d.	*s. d.*	*s. d.*	*s. d.*
1st half 1935 ..	3 9½	3 8½	6 3	6 2
2nd half 1935 ..	4 10½	4 6½	6 11	6 11
1st half 1936 ..	5 2½	4 11	7 7	7 4
2nd half 1936 ..	5 10	5 1½	8 1	8 0
1st half 1937 ..	6 5	6 7	8 4	7 10
2nd half 1937 ..	6 0	6 5	8 11	8 6
1st half 1938 ..	5 1	5 6	8 6	8 2
2nd half 1938 ..	4 8	4 3	7 7⅓	7 4
1st half 1939 ..	4 7	3 6	6 8½	6 5½

Survey of Poultry Farms.—Included in the work of the year was a survey of 120 farms in the metropolitan area, with the object of gathering information on the incidence of feather-pulling, and observing if any one system of management is conducive to the development of this vice in poultry. Results have been recorded.

From the information gathered, it appears that feather-pulling has no link with any one system of either management or feeding. It was more pronounced in adult birds where the trouble had been prevalent during the growing stages. It was also found more pronounced among birds in their first year of production than in older birds. This vice causes, at times, heavy losses, as it frequently leads to cannibalism.

Registration of Hatcheries.—Voluntary registration of hatcheries is appreciated by many breeders, and, in this connection, there has been a steady demand for departmental services. In the first year of registration thirty-four applications were received and thirty-three hatcheries were registered. In the course of the present year fity-six breeders have applied for registration. Of the breeders registered in 1938, all but one applied for re-registration during the present season.

REGISTERED HATCHERIES.

No. of hatcheries who have applied for registration	56
No. withdrawn	2
No. rejected	1
No. pending registration	2
Total now registered	51

Birds already blood-tested for registered hatcheries:—

	1938.	1939.
Blood tested	45,796	71,537
Reactors	2,271	3,989
Percentage of reactors	4.95	5.57

Among the hatcheries registered in 1938, nineteen showed a decided improvement when tested this year. Among most of the others, there has been no serious increase in the incidence of disease.

In addition to the blood-testing of poultry for hatcheries, 4,678 birds were blood-tested for small holders, and among these 8·8 per cent. were found to be carriers of pullorum disease.

Chick-sexing.—Thirteen candidates were examined in the practice of chick-sexing.

The branding of chickens as provided for by regulation has been closely supervised.

Market Inspections.—Birds condemned during 1938-1939:—

Emaciated	293
Enlarged abdomens due to cysts, dropsy, internal laying, or undetermined growths	142
Anæmic	55
Abnormal growths	55
Roup	111
Enteritis	24
Paralysis	5
Gleet	13
Bronchitis	2
Unspecified	5
Total	705

Egg-laying Competitions.—Eight egg-laying competitions were conducted under departmental supervision.

Instruction.—Instructional visits were made to poultry-raising districts throughout Queensland in the course of the year. In addition to practical lectures and field demonstrations, a correspondence course in the selection and judging of poultry has been organised.

P. RUMBALL, Poultry Expert.

REPORT OF THE CHIEF INSPECTOR OF STOCK.

During the past twelve months the pastoral districts generally have experienced good seasons, although in a few areas long dry periods necessitated the removal of stock to agistment country.

Preliminary figures of live stock in the State on the 1st January last, as made available by the Government Statistician, are:—

—	Estimate at 1st January, 1939.	Actual Numbers at 1st January, 1938.
Sheep	22,500,000	22,497,970
Cattle	6,000,000	5,959,165
Horses	445,000	446,777
Pigs	320,000	282,941

The numbers of sheep, cattle and horses have remained fairly constant, while there has been an appreciable increase in pigs

Many stud cattle were brought to Queensland during the year, mainly from the Southern States. It is generally recognised that improvement in the quality of our stock is necessary, and it is reported that the present demand for stud stock is greater than the supply.

Pasture improvement will greatly assist the pastoral industry, especially in relation to native species of grasses suited naturally to the varying soil and climatic conditions of the State.

Dr. R. B. Kelly, of the Council for Scientific and Industrial Research, in a review of five years experiments with Zebu cattle imported from America, reports that since they were mixed with the other stock that their progeny is now approximately 1,193, the oldest half-breds being about 3½ years of age, and the quarter-breds not more than yearlings. These cross-breds show a marked resistance to tick infestation as compared with the British breeds. As to their carcase value extensive data is not expected before next year, but (vide Dr. Kelly's report) "the evidence available with regard to the hybrid carcase type, though incomplete, is very strongly supported by overseas observations and reports."

A buffalo fly survey was made in March and April, when it was found that the fly has spread in an easterly direction to the Flinders River, and in a southerly direction slightly north of the nineteenth parallel, which is well within the boundaries of the declared infested area. As in previous years, the degree of infestation was heaviest in the north-western portion of the quarantine area, but heavy infestation also was found on coastal properties as far east as the Flinders River. Spraying at Kajabbi is being enforced immediately before trucking, because of cattle having carried the fly to that centre in June last.

Ephemeral fever, or "three day sickness," has been more prevalent than last year, young cattle mostly being affected—apparently those that had not previously been attacked by the disease, and consequently had not developed any degree of immunity.

VETERINARY MEDICINES BOARD.

Although the Veterinary Medicines Act has been in force for five years, a continuous stream of new veterinary medicines is submitted to the Board for consideration, and the claims of many of them in respect to their efficacy have had to be modified.

In the course of the year a revision of the Act, based on the experience gained during the five years' operations, was undertaken. An amendment provided for an extension of the power of the Board to cover the quality of drugs and ingredients contained in veterinary medicines. The right of appeal against the Board's decisions was another major amending provision.

A statistical comparison is provided for in the following table:—

VETERINARY MEDICINES ACTS.

Year.	1937	1938	1939
Registrations effected ..	570	531	736
Board Meetings	8	10	10

TICK CLEANSING AREAS.

No extensions have been made in the Helidon area during the year, but 30,000 acres of country in the Crow's Nest section is now free from ticks.

The present area under cleansing conditions is approximately 532 square miles, embracing 21,000 head of stock on 1,177 properties, of which approximately 150 are classified as tick infested holdings.

Reinfestation in the clean area has been reduced, 25 holdings now being under regular inspection, as against 63 in the previous year.

Generally, the year has been most favourable for ticks; wet weather constantly retarded operations at inopportune periods. Stock at times could not be dipped because of flooded creeks and impassable roads.

Details.

No. of Holdings Inspected.	No. of Holdings Infested.	No. Stock Dipped or Sprayed.	Total Stock Inspected.	Section.
305	33	2,867	5,564	Helidon
520	40	3,395	12,340	North Helidon
767	88	7,101	22,615	Ma Ma Creek
482	141	13,223	28,013	East Haldon—Woodbine
450	51	5,499	11,799	Ravensbourne—Hampton
549	46	6,077	16,558	Crow's Nest No. 1
375	110	13,986	20,693	Crow's Nest No. 2
3,448	509	52,148	117,582	

Travelling stock numbering 15,919 were inspected and dipped.

SOUTH BURNETT CLEANSING AREA.

Tick cleansing work in the South Burnett was practically of the same volume as that of the previous year; little progress has been made, but no retrogression in any particular section is recorded.

Details.

Divisions.	Holdings Inspected.	Holdings Infested.	Total Infestations.	Stock Inspected.	Stock Dipped.
Various	100	..	6	4,545	995
Kingaroy	81	..	..	4,479	593
	10	2	2	426	256
	17	..	..	356	298
	46	4	4	1,512	359
Nanango	287	12	33	10,117	5,122
Yarraman	436	20	79	20,760	14,111
Wondai	90	15	22	4,363	2,233
	32	3	6	898	499
Proston	152	14	52	11,238	5,689
Boondooma	172	22	31	17,418	7,413
Totals	1,423	92	235	76,112	37,568

QUARANTINE ACT.

Imports of live stock from overseas were:—6,170 aviary birds; 2 boxes bees; 3 cattle; 6 dogs; 1 donkey; 1,287 goldfish and other small fish; 12 monkeys; and 1 pig.

Articles imported after complying with quarantine regulations:—672 lb. blood albumen; 130,141 lb. casings; 213 lb. hams; 33 lb. bacon; 1 package beef samples; 3,046 hides; 24 seal skins; 11 fur skins; 3 reptile skins; 6 saddles and bridles; 140 articles, horse effects and harness; 3 sporting trophies; 27 eggs; 14 frozen game; 3 kennels; 9 bird cages; and 1 pig crate.

PLEURO-PNEUMONIA CONTAGIOSA.

The total number of outbreaks was 18 as compared with 25 in the previous year.

Details.

District.	1938.						1939.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..
Bowen	..	..	1	..	..	1	..	..	..	..	..	..	2
Brisbane	1	2	..	2	1	..	..	..	..	..	..	..	6
Cairns	..	..	..	..	..	..	..	..	..	..	..	..	..
Charleville	..	..	..	..	..	..	..	..	..	..	..	..	..
Clermont	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	1	..	..	..	..	..	..	1
Emerald	..	..	..	..	..	..	..	..	..	..	..	..	..
Gladstone	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden	..	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryborough	..	..	..	..	..	..	..	..	..	..	2	..	2
Normanton	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton	..	..	..	..	..	..	..	..	..	..	..	..	..
Roma	..	..	1	..	..	..	..	..	..	..	..	..	1
South Burnett	..	..	..	..	..	..	1	..	..	..	1	..	2
Toowoomba	..	..	..	..	..	..	..	..	..	..	..	..	..
Townsville	..	1	..	..	..	..	..	..	1	..	..	1	3
Warwick	..	..	..	1	..	..	..	..	..	..	..	..	1
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	1	3	2	3	1	2	1	..	1	..	3	1	18

TABLE SHOWING STOCK MOVEMENTS IN THE SEVERAL STOCK DISTRICTS FOR THE YEAR ENDED 30TH JUNE, 1939

District.	ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.			STOCK DIPPED.		
	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.
Barcaldine ..	16,450	92,967	1,458,613	11,033	67,162	1,148,055	18,143	42,415	2,291,647	..	..	..
Bowen	888	29,968	4,391	1,318	13,111	4	1,950	33,900	..	..	..	..
Brisbane	5,485	323,830	368,631	3,848	37,112	16,202	9,275	513,181	319,522	1,860	3,244	46
Cairns	1,124	1,744	15,410	2,579	34,563	81	13,274	120,347	1,525	..	1,130	12
Charleville ..	9,349	81,257	739,288	17,129	161,508	1,615,577	12,037	47,667	1,181,616	..	..	..
Clermont	983	11,693	36,763	2,284	65,289	75,214	4,873	43,165	98,738	90	3,657	1,030
Cloncurry ..	3,110	23,444	106,641	5,345	149,452	285,468	15,683	153,814	276,064	742	32,646	..
Emerald	2,111	28,795	338,688	7,194	129,163	328,352	8,202	81,373	394,568	288	25,966	..
Gladstone ..	1,340	45,805	1,837	1,787	28,735	7	1,335	44,111	14	786	6,411	..
Helidon	1,457	27,495	5,458	1,866	56,504	1,832	2,195	76,268	1,158	663	67,323	..
Hughenden ..	1,953	12,022	87,576	3,992	37,975	326,613	4,974	18,027	573,377	366	7,189	..
Longreach ..	5,828	23,299	566,952	8,976	55,303	1,270,499	12,255	26,315	1,135,172	..	..	..
Maryborough ..	2,911	58,387	26,977	7,100	227,539	750	7,495	276,096	..	34	13,838	..
Normanton ..	1,095	465	3,650	2,062	30,550	..	3,631	19,936	1,200	..	..	..
Rockhampton ..	2,153	68,696	85,815	2,723	65,337	60,152	14,028	273,848	27,685	71	1,519	..
Roma	2,966	51,547	182,262	10,375	232,035	763,543	16,801	285,092	1,199,183	654	23,021	..
South Burnett ..	3,030	54,777	21,861	5,427	177,200	16,177	7,932	168,329	1,666	837	68,982	..
Toowoomba ..	5,608	101,478	358,077	15,079	287,000	636,537	29,369	757,983	1, 13,834	388	10,877	3
Townsville ..	6,072	88,835	23,229	6,895	37,849	527	7,617	32,315	235	103	2,489	..
Warwick	4,142	58,859	308,080	5,841	51,593	611,412	9,903	257,717	1,735,446	220	8,222	148
Winton	4,058	33,394	365,818	7,126	81,412	413,294	4,382	22,898	561,885	..	..	..

STOCK SOLD AT THE CANNON HILL SALEYARDS.

Description of Stock.	1936-37.	1937-38.	1938-39.
Bullocks	83,661	94,391	67,534
Cows	55,588	73,875	73,823
Calves	70,428	73,955	66,890
Sheep	454,649	477,551	430,792
Lambs	49,447	62,294	88,092
Swine	59,521	62,014	62,021

From this table it will be seen that there was a decrease in several of the classes of stock sold, although the sale of lambs increased to a considerable extent.

STOCK VALUES.

Prices.	1936-1937.			1937-1938.			1938-1939.		
	£	*s.*	*e.*	£	*s.*	*d.*	£	*s.*	*d.*
Cattle—									
Average value per cental—									
Chilled bullocks	1	6	11	1	11	10	1	8	11
Trade bullocks	1	4	11	1	8	1	1	8	0
Cows & heifers	1	3	1	1	5	1	1	6	3
Other classes of stock—									
Average value per lb.—									
Wethers ..	0	0	3·52	0	0	3·53	0	0	2·98
Ewes ..	0	0	3·27	0	0	3·20	0	0	2·7
Lambs ..	0	0	6·61	0	0	6·89	0	0	5·73
Calves ..	0	0	3·25	0	0	3·37	0	0	3·17
Swine ..	0	0	5·86	0	0	6·66	0	0	6·29

SLAUGHTER-HOUSES.

The observance of "*The Slaughtering Act of* 1898" and regulations by butchers has, on the whole, been satisfactory, although the issuing of warning against practices, usually due to negligence, not in keeping with the requirements of the Act, continues to be necessary. Prosecutions numbered 24, and in each case the offender was convicted and fined.

Supervision was maintained over the slaughter-houses throughout the State. Some establishments have become obsolete and inadequate for present slaughtering requirements, but, on the whole, the standard is reasonably fair. Painting, tarring, and limewashing has been carried out at the necessary intervals, very little laxity being observed in this respect. Concrete floors have needed repairing in some instances, and several have been relaid; the floors themselves have been kept clean.

A tendency by some drovers to carry the waybill away with them after delivering stock at a slaughteryard has been observed, but forgetfulness is usually the cause of this breach.

Much trouble has been encountered in connection with regulation 23, which provides for the sending of a notice of intention to slaughter stock, to enable the inspector to see the animals. Some butchers have been very dilatory in this respect, and corrective action has been taken.

Many warnings and several prosecutions have been necessary because of neglect to bury blood and offal as prescribed.

The keeping of swine at slaughter-houses has had constant attention. The proper confinement and housing generally is very fair. Low lying country during wet weather must continue to present the same drainage difficulties as met with in former years. Unsuitable sties are receiving attention and new concrete floors have been laid when necessary. Several cases of feeding raw offal to swine induced warnings, and the offences were not repeated.

BUTCHER SHOPS.

Generally, butcher shops have been kept clean and otherwise in accordance with the legislative requirements. While the better type of shop, many of modern design, continues to replace old premises, there is still need for improvement in some towns.

Many butchers are prone to neglect the regulation providing for the keeping of butcher shop doors closed continuously, except for ingress or egress. In this respect, a recent prosecution was necessary.

Vehicles used for the conveyance of meat have received constant supervision, and their use for no other purpose insisted upon.

In the vast majority of cases, every assistance and response from butchers has helped to ensure that the best of meat, handled hygienically, is supplied to consumers.

BRISBANE ABATTOIR AREA.

New registrations in the metropolitan abattoir area included 11 new butcher shops, seven new delivery vehicles, and seven new cash cutting carts.

Butcher shops and vehicles have been systematically inspected; visitations totalled 3,640.

Several reports of illegal slaughter within the area were received, but were unconfirmed by night patrols. It is considered, however, that this practice which was, in some degree, prevalent prior to the inception of the Abattoir Act, has been reduced to a minimum.

The delivery of meat on push bicycles is an irregularity which persists, and in some districts has increased.

As a consequence of recommendations made by a special committee appointed by the Minister for Agriculture and Stock in connection with the grading and branding of beef for consumption in the metropolitan area, regulations were gazetted on the 27th June, providing for the grading of all such beef into three grades—1st grade, 2nd grade, and beef lower than that graded 2nd, which shall not bear any indication of grade. The machines for grade marking have been procured by the Queensland Meat Industry Board, and demonstrations held at the abattoir. It is expected that graded beef will soon be on sale. It is considered that this system of grading and branding will give general satisfaction. Many cattle growers believe that by this system they will obtain better prices for their prime stock.

METROPOLITAN SHOPS.

Details of registrations up to 30th June:—

—	1936-37.	1937-38.	1938-39.
Butcher shops	284	293	302
Delivery vehicles	401	437	455
Cash cutting carts	77	64	64

Shops and slaughterhouses in the State, exclusive of the metropolitan abattoir area, number:—

Shops	649
Slaughter-houses	549

BACON FACTORIES.

Bacon factory killings have received a decided impetus, in direct contrast to the decrease of last year, and have reached the highest level since the period 1935-1936, when a total of 383,207 was attained. The increase of this year over last year is 61,380. The number of pigs exported has also increased during the last twelve months.

Number Slaughtered.	1936-37.	1937-38.	1938-39.
Pigs	315,837	293,723	355,103

Of the 1938-39 total, 56,429 pigs were slaughtered for export purposes.

Details of condemnations:—

Tuberculosis.	1936-37.	1937-38.	1938-39.
Carcases	3,081	2,268	2,516
Heads	22,939	22,387	26,893

In addition, 29,589 cattle and 12,168 calves were slaughtered at bacon factories.

STOCK SLAUGHTERED AND CONDEMNED AT THE BRISBANE ABATTOIR.

The following statement shows the numbers of stock slaughtered and condemned at the Brisbane Abattoir for the home markets, stock killed for export purposes not being included. Again, the statistics indicate an increase in all classes of stock killed, with the exception of pigs, which have decreased. A marked increase in cattle killing is indicated:—

Description of Stock.	1936-37.	1937-38.	1938-39.
Bullocks	41,350	32,794	39,089
Cows	45,240	61,880	90,237
Calves	72,286	74,735	80,810
Sheep and lambs ..	344,279	384,618	395,777
Swine	38,176	31,829	29,200

Condemnations were:—

Cause.	Bullocks.	Cows.	Calves.	Sheep & Lambs.	Swine.
Tuberculosis	468	966	5	..	629
Bruising	33	81	31	1	..
Emaciation..	179	302	7,036	221	..
Jaundice	3	5	..	..	..
Fever	17	34	4	94	..
Abscesses	17	33	9	146	12
Gangrene	37	80	10	..	1
Redwater	10	17	..	..	..
Septic wounds	7	18	..	..	1
Peritonitis	..	1	..	8	..
Other causes	12	33	14	15	16

POLICE INSPECTION.

The return of stock slaughtered under the supervision of police acting inspectors, as compared with the two previous years, is as follows:—

Description of Stock.	1936-37.	1937-38.	1938-39.
Bullocks	34,263	28,278	35,043
Cows	44,721	49,475	56,184
Calves	4,928	5,156	6,645
Sheep	58,257	64,939	66,634
Swine	15,271	15,696	15,644

The next table shows stock slaughtered and condemned in the course of the year, and is compiled from returns furnished by permanent officers of the Department performing slaughtering duties throughout the State, with headquarters at the following centres:—Atherton, Ayr, Beaudesert, Biggenden, Biloela, Boonah, Boondooma, Bowen, Bundaberg, Cairns, Charleville, Charters Towers, Chinchilla, Clermont, Clifton, Cloncurry, Coolangatta, Crow's Nest, Dalby, Emerald, Gayndah, Gladstone, Goombungee, Goondiwindi, Grantham, Gympie, Helidon, Hughenden, Ingham, Innisfail, Ipswich, Jandowae, Julia Creek, Killarney, Kingaroy, Laidley, Longreach, Lowood, Mackay, Malanda, Mareeba, Maryborough, Miles, Millmerran, Monto, Mount Isa, Mundubbera, Murgon, Nambour, Nanango, Normanton, Oakey, Pittsworth, Proston, Ravensbourne, Rockhampton, Toogoolawah, Toowoomba, Townsville, Warwick, Wandoan, Wondai, Wowan, and Yarraman.

The return of swine slaughtered is exclusive of those treated at bacon factories, a list of which is shown separately.

PROSECUTIONS.

Acts.	Number of Prosecutions.	Number of Convictions.
Diseases in Stock Acts	23	22
Slaughtering Act	24	24
Brands Acts	7	7

TUBERCULIN TESTS.

Animals submitted to the tuberculin test totalled 4,551, as compared with 4,382 in the previous year. There were 227 reactors. Many of the herds tested under the tubercle free herd scheme were subjected to the second test.

Details.

Purpose of Test.	Number of Animals Tested.	Number of Positive Reactors.
Tubercle Free Herd Scheme ..	1,714	14
Selected Animals—Elimination of Tuberculosis in Swine ..	920	94
Various	1,917	119

Dipping Fluids.

The number of dipping fluids analysed during the year was 432.

Horses Exported Overseas.

Horses exported overseas numbered 1,464.

Viscera and Other Specimens Examined.

Samples of viscera numbering 239, and toxicological specimens were received and analysed, of which 197 were samples of viscera and ingesta. Of the samples of viscera and ingesta, 33 gave definite amounts of arsenic, representing 16.7 per cent. of the samples received; and 21 gave traces of arsenic of doubtful significance. One contained strychnine, one nitrates, and two copper.

Miscellaneous toxocological specimens—such as baits, plants, earths, and waters—to the number of 42 were received. Of these samples, eight gave definite amounts of arsenic, representing 19 per cent.; three gave traces of arsenic of doubtful significance; three contained hydrocyanic acid, and one contained oxalic acid.

Description of Stock.	Number Slaughtered.	Carcases and Portions Condemned.	Disease.	Percentage.
Bullocks	44,786	88 Carcases	Tuberculosis	·19
		12 Forequarters	Tuberculosis	·02
		9 Hindquarters	Tuberculosis	·02
		12 Heads	Tuberculosis	·02
		1 Carcase	Bruised	·002
		11 Forequarters	Bruised	·02
		2 Carcases	Emaciation	·004
		40 Heads	Actinomycosis	·08
		2 Forequarters	Pleuro Pneumonia	·004
		1 Carcase	Actinomycosis	·002
		1 Carcase	Carcinoma	·002
		1 Carcase	Parasitic Infection	·002
Cows	112,868	265 Carcases	Tuberculosis	·23
		28 Forequarters	Tuberculosis	·02
		3 Hindquarters	Tuberculosis	·002
		36 Heads	Tuberculosis	·03
		1 Carcase	Bruised	·0009
		3 Forequarters	Bruised	·002
		1 Carcase	Redwater	·0009
		10 Heads	Actinomycosis	·009
		1 Carcase	Advanced Pregnancy	·0009
		5 Carcases	Carcinoma	·004
		1 Forequarter	Gangrene	·0009
		1 Carcase	Fevered	·0009
		1 Carcase	Offensive Odour	·0009
		1 Carcase	Septic Metritis	·0009
Calves	18,256	326 Carcases	Under weight	1·78
Sheep	244,857	4 Carcases	Emaciation	·001
		6 Carcases	Bruised	·002
		1 Carcase	Caseous Lymph Adenitis	·0004
		7 Carcases	Fevered	·002
		1 Carcase	Jaundice	·0004
Swine	39,938	124 Carcases	Tuberculosis	·31
		701 Heads	Tuberculosis	1·75
		3 Carcases	Abscesses	·007
		2 Heads	Abscesses	·005
		3 Carcases	Urticaria	·007
		4 Carcases	Pyæmia	·01
		4 Carcases	Septicæmia	·01
		4 Carcases	Emaciation	·01
		4 Carcases	Swine Plague	·01

The following is a summary of all stock slaughtered for home consumption throughout the State. It is exclusive of stock killed for export purposes, and those killed on farms and stations for private consumption.

Inspection.	Bullocks.	Cows.	Calves.	Sheep.	Swine.
Bacon Factories	9,000	20,589	12,168	..	298,674
Brisbane Abattoir	39,089	90,237	80,810	395,618	29,200
Departmental Inspectors	44,786	112,868	18,256	244,857	39,938
Police—Acting Inspectors	35,043	56,184	6,645	66,634	15,644
Totals	127,918	279,878	117,879	707,109	383,456

ARTHUR H. CORY, M.R.C.V.S.,
Chief Inspector of Stock.

REPORT OF VETERINARY ADVISER.

ADMINISTRATION OF ANIMAL HEALTH SERVICES.

As in the past, the co-ordination of animal health services in North Queensland has been maintained. The principle of having this come under the Acting Director of the Animal Health Station at Oonoonba serves the double purpose of keeping this station in close touch with the animal health position in that part of the State and ensuring that laboratory and field work are properly co-ordinated.

The transfer of the veterinary officer at Atherton to Oonoonba has strengthened that station, as that officer had previously had several years' experience in the country. He has been replaced by a veterinary officer formerly stationed at Oonoonba.

On a number of occasions problems concerning the Chief Inspector of Stock have been discussed with him and appropriate action set in train.

There is great need, however, for the establishment of a fully co-ordinated scheme to embrace all animal health activities of this Department.

RESEARCH.

Problems of veterinary research have been discussed with officers concerned from time to time and some very useful work arranged on a co-operative basis with other officers of the Department, and, in two particular directions, with certain members of the staff of the University of Queensland.

(*a*) *Ephemeral Fever* (Three-day sickness).—During the year under review a recrudescence of this disease occurred throughout the eastern half of the State, the incidence being higher than during the previous summer. From field officers' reports, however, it is obvious that on this occasion the disease was practically confined to animals that either would not have been born, or would have been too young to contract the disease, on the occasion of the primary serious visitation. It is evident that one attack confers a relatively long lasting immunity, apparently at least a year, and sufficient to ensure that if an animal contracts ephermeral fever a second time it frequently does so in an inapparent form.

(*b*) *Sawfly Poisoning of Stock.*—Some further work on this has been undertaken and our knowledge of the nature of the poisoning is much more complete than formerly. More extensive work, however, will have to be done before methods of control other than those at present employed, e.g., destruction of the ironbark trees which act as hosts for the sawfly, can be suggested.

The problem is not an easy one to investigate, inasmuch as material is available for a comparatively short and uncertain period of each year, and, as the poisoning occurs only at a spot distant from Brisbane, investigations are correspondingly expensive.

(*c*) *Coastal Fattening Observations.*—The earlier observations, mentioned in last year's report, have ben concluded, all the animals in question having been sent to slaughter. It has been shown that the pastures will not only fatten stock, but produce prime beef, approximately 80 per cent. being graded (most of it actually exported) as first grade chilled beef. Owing to the fact that these pastures can be maintained in the green state through the year, it is possible to so arrange grazing that cattle can be turned off at any particular month desired, and thus coastal fattening affords an opportunity of marketing stock at a time when fat cattle for chillers are ordinarily not available in the North, or, even so far as the rest of the State is concerned, in insufficient numbers.

Much credit is due to Mr. Mulhearn and the officers associated with him for the careful and painstaking records kept. These have allowed a careful analysis of results, and show that cattle *make* right through the year, and that their growth and fattening are not prevented by either the high rainfall or the intensely hot weather which normally occurs each year during the wet season.

Further observations are being continued, and in these it has been possible to arrange for additional cattle to be fattened on other properties than those previously utilised.

(*d*) *Tick Fevers.*—As will be seen from the report of the Senior Veterinary Surgeon (Dr. J. Legg), Animal Health Station, Yeerongpilly, his researches have led to the production of a new type of vaccine, which, as it contains suitable parasites for immunising against all types of redwater, marks an important advance in available methods of control.

(*e*) *Parasites of Stock.*—During the year under review the veterinary parasitologist and entomologist (Dr. F. H. S. Roberts), proceeded abroad. The contacts he was able to make with workers in North America, Europe, and South Africa, to say nothing of the additional information he has been able to bring back, will prove of very considerable benefit indeed to the stockowners of Queensland.

(*f*) *Poison Plants.*—The special committee of the Department of Agriculture and Stock and the University of Queensland has continued to function most satisfactorily. A large number of investigations into known poisonous and suspected plants has been carried out and much additional information gleaned. Important in this connection is the discovery that soda bush (*Threlkeldia proceriflora*) is poisonous for sheep, for evidence would go to show that this revealed a hitherto unsuspected cause for mortalities previously unexplainable. Thanks to this information, these should now largely be avoided.

A further important discovery is the identification of the actual poisonous principle in wild mint (*Salvia reflexa*). On this, in the future, may well be based satisfactory methods of treatment for stock poisoned by wild mint and other plants, which it is suspected are harmful by reason of containing the same substance.

(*g*) *Condemnations in Chilled Beef.*—Late in the financial year, portion of certain shipments of beef from Queensland were condemned in London on account of the development of a taint unlike anything previously encountered and definitely not an ordinary spoilage taint. The problem was obviously of considerable importance and an energetic team of workers (veterinary, chemical, and botanical) from various branches of the Department was speedily organised to work in collaboration with Mr. J. G. H. Hines, B.Sc., of the Physiology Department of the University, and other members of the University staff. As a result, considerable progress has been made. The problem is an extremely involved one, largely of a chemical order, but sufficient information was shortly forthcoming to enable veterinary officers of the Commonwealth Commerce Department to take appropriate steps to prevent a recurrence of the trouble in meat overseas.

Further, it is believed that the condition is purely a local one, and therefore not likely to be met with in chilled beef generally.

In this case investigators in the Department of Agriculture and Stock, and the University, have been able, with the facilities and help provided by the Chairman of the Queensland Meat Industry Board and the Abattoir staff, and the co-operation of the veterinary staff of the Commerce Department, to cover a wide field of investigation, and thus has been strikingly demonstrated the advantage of arranging the fullest co-operation of organisations interested and persons able to help in the solution of a problem.

(*h*) *Synthetic Tuberculin.*—In order that the best product available might be utilised in tuberculosis eradication it was arranged for Dr. Legg, Senior Veterinary Surgeon, and Mr. J. C. J. Maunder, B.V.Sc., Government Veterinary Surgeon, to undertake a comprehensive test of a newly devised product, viz., synthetic tuberculin, which has more recently been adopted in America, where tuberculosis eradication is being undertaken on a very large scale. This work is still in progress.

PLANNED ANIMAL PRODUCTION.

In his report to the Commonwealth Government, following his tour of Australia, Dr. J. Hammond advocated the formation of an Australian organisation to analyse and define problems concerning animal production in Australia, to recommend ways and means of attacking these problems, and to asist in the co-ordination of the forces of all organisations connected with the improvement of animal production.

The appointment of the Australian Animal Production Committee by the Australian Agricultural Council followed, and the committee came into being at a meeting held last month, your veterinary adviser being appointed as representative of this Department.

Arrangements have been made for the appointment of various technical sub-committees, which are to consider specific phases of animal production and to suggest the most effective methods by which desired results may be brought about.

As this committee consists of representatives of producers, as well as Commonwealth and State Government Departments, it is anticipated that the aims and viewpoints of all persons connected with the industry may well be co-ordinated, to the general improvement of Australian animal production.

H. R. SEDDON,
Veterinary Adviser.

APPENDIX A.

REPORT OF THE SENIOR INSTRUCTOR IN SHEEP AND WOOL.

Early in the year conditions were favourable throughout the greater portion of the sheep areas of the State, as well as on the Darling Downs. Summer rains commenced earlier than usual, but were followed by a hot dry spell during midsummer. The usual wet season was remarkable for beneficial rains over most of the State, excluding a belt of country in the Central-West, where drought conditions still prevail. Further falls in other Central and North-Western areas resulted in re-establishing full pastures of Mitchell grasses, which had become depleted during the previous dry seasons. This will increase the carrying capacity of large areas, especially as water supplies have been replenished.

With the adequate and more regular rains, an increase may be expected in lambing percentages. Losses will be below normal, for agistment country was available close to the dry belt from which stock had to be removed.

Classing the breeding flocks formed an important part of instruction, which should benefit the grower and improve stock standards. The importance of the use of better rams has been stressed in all cases where breeding is practised.

Too much importance cannot be attached to the classing, culling, and selection of the breeding flock during good seasons, both in the interests of the individual grazier and of the State.

Practical demonstrations continue to be an important section of the field work. Advice has been given on the running of wethers for wool production, and more particularly on fattening them for sale before they become too old. Fat wethers, also fat ewes, sold at satisfactory prices throughout the year.

Stores have been in demand at prices more in keeping with wool values, but, because of the satisfactory seasonal conditions in most of the sheep country, values have remained firm. Old sheep, both ewes and wethers in store condition, however, have been in low demand at low rates—especially in the Central-West and North-Western areas.

Fat Lambs.—Fat lamb production has increased as a result of the introduction of rams of British breeds from the Southern States, and from New Zealand. Several small stud flocks have now a foundation of good type and quality sheep of the Border Leicester, Romney Marsh, Southdown, and Dorset Horn breeds. Several registered flocks of Corriedales also are established. These breeding establishments should have a definite influence on the improvement of the ewe flocks suitable for the breeding of fat lambs.

The year's most satisfactory experience of fat lamb raising was that, although increased numbers were marketed, the type showed an improvement, and the influence of the use of pure sires was more noticeable. Lambs in many cases were forwarded at the correct age for export, but others were held too long because of the unusually severe heat wave during midsummer on the Darling Downs, the chief lamb-raising region.

In country further west, the Corriedale, Border Leicester, and Dorset Horn rams are being introduced by graziers, who aim to build up flocks of the respective breeds and crosses, in order to supply the demand for suitable breeding ewes in the better fat lamb raising districts.

The Departmental Fat Lamb Scheme.—This scheme has been in operation for the past four years, during which time over 400 sheep of the British breeds and Corriedales were purchased and distributed on loan to 105 farmers chiefly on the Darling Downs. Others to receive them are located from the New South Wales border to the Atherton Tableland. Although funds were only available for the purchase of sheep for special purposes during the year, many graziers who received sheep under the scheme in previous years continue to be interested.

Details of fat lamb returns were obtained from some farmers, and are as follows:—

Rams.	Ewes.	Average Price.	Number.	General Average.
		s. d.		s. d.
Romney Marsh	Merino ..	14 0	163	14 8
Romney Marsh	Crossbred..	17 6		
Border Leicester	Merino ..	16 11		
Border Leicester	Corriedale	16 9	1,423	17 0
Border Leicester	Crossbred	18 0		
Southdown ..	Merino ..	16 0		
Southdown ..	Corriedale..	16 9	473	16 10
Southdown ..	Comeback	16 9		
Southdown ..	Crossbred	17 1		
Dorset Horn ..	Merino ..	19 7	1,645	18 1
Dorset Horn ..	Corriedale..	19 8		
Dorset Horn ..	English Leicester	17 6		
All breeds ..	..	All sales	3,705	17 6

These details are disappointing, as the number of lambs included are not representative of the actual sales under the scheme. An unusual and severe heat wave over the Downs had a serious effect on the lambs during the topping off period, which reduced the number of lambs sold as suckers. Prices varied considerably during the season, but at all times the prime lambs sold at a price payable to the grower.

Distinction has been obtained by Queensland fat lamb raisers in gaining second place in the September series of the All-Australian fat lamb competition held at Smithfield, England.

In addition to the fat lamb scheme, special sheep-breeding trials are in progress.

On the Atherton Tableland several farmers are co-operating with the Department, and have on their properties merino ewes mated with either Border Leicester, Romney Marsh, Southdown, or Dorset Horn rams. As the success or otherwise of these trials is indicated in the progeny and their offspring, they have not been in progress long enough to finally determine their value, but experience so far points to the advantage of correct and careful flock management, and that the Romney Marsh progeny at the present stage promise to be the most suitable to the Northern conditions.

On a property near Mackay, both rams and ewes of pure Dorset Horn breed have been placed, also a number of merino ewes. The intention is to try out the pure breed, and also to cross with the merino for producing crossbred lambs, and this trial is in progress, as well as a trial with the Romney Marsh breed.

In the Callide Valley 500 western merino ewes were placed on a scrub farm previously cleared, with portion of it sown to Rhodes grass, leaving a few hundred acres of self-grassed pasture, and 100 acres of cultivation, chiefly for wheat. After two years, there is an increase of over 1,000 lambs, besides two clips of wool. The sheep are now looking well; the half-bred maiden ewes are well grown, as also are the lambs. This trial may be described as highly satisfactory.

BRISBANE WOOL SALES.

Wool prices during the year continued at low levels. Eleven series of sales were held, and the average prices for greasy wools were:—

Sale No.	Per Bale.			Per Lb.	Bales Sold.
	£	s.	d.	d.	
1	14	2	5	10·62	50,072
2	15	4	11	11·67	52·001
3	14	16	5	11·39	50,651
4	14	11	2	11·30	50,938
5	14	0	9	10·80	49,141
6	13	7	9	10·13	47,533
7	13	10	7	10·14	42.776
8	13	14	6	10·05	49,530
9	13	1	1	9·59	49,397
10	13	18	0	10·31	51,044
11	13	5	11	10·05	45,004
Season ..	14	0	0	10·56	538,087

The total amount realised from the Brisbane sales was £7,575,508 14s. 2d. Considering the low values throughout the year, clearances were satisfactory, leaving 13,939 in store awaiting disposal.

FARMER'S WOOL SCHEME.

During the year consignments of wool were received from 175 growers, and aggregated 705 bales, the greatest quantity dealt with under the scheme in one year.

The object of the scheme is to make available to small growers, and those running crossbreds or British breeds, a system by which their wool is properly classed, and placed on the market to best advantage. The scheme is provided for:—

(*a*) Holdings of less than 1,500 merino sheep.

(*b*) Wool from crossbred and British breeds from any holding.

(*c*) Bags, butts, mixed, and bar bales from any holding.

(*d*) Star lots from our present selling agents.

Considering the prices ruling at the Brisbane sales, the wool dealt with by the Department realised well up to the average, especially when it is realised that several growers were interested in the lines offered.

HEALTH OF FLOCKS.

Seasonal conditions in many districts were the cause of a greater percentage of worm troubles in summer and autumn, and this necessitated extensive drenching. Lice in sheep is spreading further into the west, and may become a serious menace unless dipping is practised. Blowfly trouble was experienced early in the year, but was checked during midsummer. General rains commenced late in January, and resulted in a serious and widespread fly attack which lasted until checked by the cold winds of winter. As well as the crutch-strike, body-strike was common and necessitated shearing, crutching, and jetting (according to conditions prevailing). Heavy losses were averted by careful management and constant work in applying methods of protection and control.

Many country centres were visited in the course of the year, and lectures or general instructions were given as required. Practical demonstrations on the holdings in wool-classing, sheep-classing, culling the ewe flock, and selecting sheep for breeding purposes were included in the services available to sheep owners.

Radio lectures were given on subjects of interest to sheep owners, while articles were prepared for publication in the *Queensland Agricultural Journal*, the *Weekly News Bulletin*, and the metropolitan provincial Press.

JAS. CAREW,
Senior Instructor in Sheep and Wool.

APPENDIX B.

REPORT OF DEPUTY REGISTRAR OF BRANDS.

Details of Registrations, Transfers, &c., for Year, 1938-1939.

—	Number.	Fees Received.			Number since Inception of Legislation.
		£	s.	d.	
Three-piece brands registered	650	650	0	0	87,841
Cancelled brands reallotted	30	90	0	0	7,097
Symbol brands registered	39	292	10	0	1,662
Cattle earmarks registered	367	367	0	0	17,728
Brands transferred ..	1,565	782	10	0	56,004
Sheep brands and earmarks registered ..	238	149	10	0	12,706
Sheep brands and earmarks transferred ..	184	46	0	0	6,469
Distinctive brands registered	12	No. fee			..
Alteration of address of brands	272	No fee			..
Brands cancelled ..	15	No. fee			..
Earmarks cancelled ..	96	No fee			..
Sheep brands and earmarks cancelled (special)	3,087	No fee			..
Total	..	£2,377	10	0	..

During the year, the registrations of horse and cattle brands, also cattle earmarks, increased, but there was a slight falling off in the number of transfers and sheep registrations.

The fees collected were £70 in excess of those for the previous year.

The cancellation of disused sheep brands and earmarks was completed during the past twelve months, when nearly 1,600 additional brands or earmarks were dealt with, making a total of over 3,000 removed from the Directory.

Closer attention is being given to the inspection of brands and earmarks of stock arriving at the Cannon Hill saleyards, with the result that a considerable amount of irregularities in branding and earmarking has been detected. In the majority of instances the infringements of the Brand Acts were apparently due to carelessness, but, in many cases of earmarking, it is evident that pliers were not used. As it is illegal to use a knife for earmarking, warnings were given to those concerned in this practice, also in regard to irregular branding, size of brands, and correct shape of branding irons, &c.

The action taken by advising owners of their obligations under the Acts regarding branding should have a beneficial effect in the direction of minimising the excessive branding of hides.

There were seven prosecutions for breaches of the Brands Acts, and convictions were obtained in each case.

H. S. ILIFF,
Deputy Registrar of Brands.

APPENDIX C.

STAFF INSPECTOR'S REPORT, 1938-1939.

Regular inspectional tours were continued throughout the State during the year. Seasonal conditions throughout most of the pastoral, agricultural, and dairying industries were the best for many years.

Prices for stock and farm products maintained a reasonably high level, without any notable fluctuation.

Field officers of the several branches of the Department maintained a high standard of efficiency. A well organised fodder conservation campaign produced satisfactory results.

The work of officers under the Dairy Branch has shown excellent results in respect of general dairy routine and improvements to premises.

Officers entrusted with the supervision of the provisions under the Diseases in Stock Act, Slaughtering Act, and Brands Act, have done excellent service and their co-operation with the veterinary officers in respect of animal health matters has been completely maintained.

A full-time inspectional service has been in operation at all bacon factories, and the services of inspectors for examination of stock slaughtered for human consumption in the 74 districts of the State have influenced many improvements to slaughtering and retail premises throughout the State.

L. D. CAREY, Staff Inspector.

APPENDIX D.

REPORT OF THE VETERINARY SURGEONS' BOARD.

The Board held seven meetings during the year, and sixteen new registrations were approved, making a total of ninety veterinary surgeons registered to the 30th June, 1939. Twenty-eight of these hold diplomas or degrees in veterinary science. Twenty-nine hold diplomas from approved agricultural colleges, and thirty-three having had five years bona fide practice prior to the Act coming into force, were registered under Section 18 (1) (111) of the Act.

Three veterinary surgeons have left the State, and there are now eighty-seven names on the Register. Seven cases were reviewed at the request of the applicants, but in each case the Board could see no reason to alter the decision previously given.

Three applicants under Section 18 (1) (111) of the Act were refused registration. The Board also interviewed six applicants in connection with their claims for registration.

An application to the Full Court for the issue of a writ of mandamus was made by an applicant who had been refused registration. As in the previous case, the Full Court refused the application and awarded costs to the Board.

H. S. ILIFF,
Registrar.

REPORT OF THE DIRECTOR OF THE ANIMAL HEALTH STATION, YEERONGPILLY.

The greater portion of the work of the Station has been, as heretofore, the rendering of free services to the grazing and farming industries. Vaccines have been despatched promptly by the aeroplane in cases where quick delivery was essential.

Details of these routine services—and those of last year for comparison—are tabulated below:—

	1937-38.	1938-39.
Mammitis vaccine	24,735	31,675
Blackleg vaccine	520	252
Pleuro-pneumonia C. vaccine	74,295	88,925
Setons	11,425	18,600
Blood for tick-fever inoculation	7,364	10,887
Bleeders	65	47
Stud animals stalled for tick-fever inoculation	93	66
Acaprin	2,954	4,316
B. pullorum antigen	46 oz.	86½ oz.
Strangles vaccine	94	62
Calf pneumonia vaccine	360	475
Specimens submitted	4,045	5,226
Blood samples submitted for contagious abortion test	3,142	4,191
Inward correspondence	6,530	6,030
Outward correspondence	7,478	7,812

Preventive as against curative treatment of animal ailments is a primary aim of the Station. The necessity for stock owners, especially of travelling cattle, inoculating against pleuro-pneumonia contagiosa is always stressed, especially as such cattle are not only liable but frequently do carry the disease to parts of the State. A regular advice is that all cattle should be inoculated during the annual muster, now that a supply of pleuro-pneumonia vaccine is always available.

Pullorum antigen is being used extensively by the departmental poultry staff, and good results are being obtained. The registration of hatcheries also should prove of great value in keeping poultry farms clear of the disease.

BLACK-HEAD IN TURKEYS.

There have been widespread outbreaks of black-head in turkeys, and for which an intra-muscular injection is recommended. In every case, this trouble has occurred where turkeys have been running with fowls, and feeding on the ground. When trough feeding has been adopted there has been no noticeable occurrence of the disease.

A calf pneumonia vaccine has been prepared at this Station for the last six years, and gradually increasing quantities are being distributed, with the result that the disease has been completely checked on farms on which it has been, hitherto, an annual occurrence.

Herd testing for contagious abortion has been extended as far as practicable, and every effort has been made, without compulsion, to induce owners to subject their animals to test and subsequent slaughter of positive re-actors to the test. Hitherto the disease has been confined to the dairying breeds, but recently several beef animals purchased in another State have reacted to the test for contagious abortion after arrival at the Animal Health Station.

An account of the general activities of the Station is contained in the accompanying reports of Dr. F. H. S. Roberts and Dr. John Legg.

J. A. RUDD,
Director.

STAFF REPORTS.

(1) ANIMAL ENTOMOLOGY AND PARASITOLOGY.

The entomologist and parasitologist was abroad on courses of special study for the greater part of the year and did not return until 3rd February. This report, therefore, covers the period on from that date to 30th June.

Hæmonchosis and Oesophagostomiasis in Sheep.—Continuous dull showery weather experienced during the summer and autumn was responsible for serious occurrences of hæmonchosis in sheep, particularly in the south-eastern section. These outbreaks were more severe that have been experienced for many years.

In view of the finding by the Council for Scientific and Industrial Research, that copper sulphate is not very efficient against immature *H. contortus*, a slightly modified formula of the bluestone nicotine sulphate hair worm drench is being advised. Considering the ill-effects that sometimes follow the full strength hair worm drench, especially in weak sheep, the amount of nicotine sulphate in the drench advised for *H. contortus* has been reduced to three-quarters.

In the autumn and early winter, the effects of *O. columbianum* were very apparent in young sheep in several areas on the Darling Downs. The grazier in this State will not employ the enema treatment advised by the C.S.I.R., owing most probably to its cumbersomeness. Further tests are being made to find a suitable treatment for this parasite. Phenothiazine is being tried, and has so far given very encouraging results.

Blowflies in Sheep.—Intense blowfly activity in sheep occurred in the past summer and autumn, particularly throughout the Southern and Central districts. Losses have been heavy.

Hæmonchosis in Calves.—Two outbreaks of hæmonchosis in calves and yearlings were reported in June from Cecil Plains and Giru. In the latter instance losses were very heavy.

Pig Helminths.—A survey has been commenced to ascertain the prevalence and distribution of the helminths of the pig throughout the State. Only about seventy animals have been examined so far, but already there are indications that pigs in North Queensland are heavily parasitised, particularly by stomach worms.

Bots in Horses.—This year, for the first time in my experience, adult *Gastrophilus intestinalis* were active. These adults were ovipositing on horses in the Stanthorpe-Wallangarra area in the autumn. The most prevalent species in Queensland is G. (nasalis). This species appear on the wing during the late spring and early summer.

Field Day.—A field day held at Bundaberg on 24th June by the Bureau of Sugar Experiment Stations was attended, and an address given on parasites of the horse.

Publications.—Two papers were published, namely:—

1. "The Gastro-Intestinal Helminths of Cattle in Queensland: Their Distribution and Pathogenic Importance," in Proc. Roy. Soc. Q. Vol. L. p. 46-54.
2. "A Survey of the Gastro-Intestinal Helminths of Healthy Cattle in Queensland," in J. Comp. Path. and Therapeutics, June, 1939.

F. H. S. ROBERTS,
Entomologist and Parasitologist.

(2) REPORT OF THE SENIOR VETERINARY OFFICER.

Tick Fever Immunisation.—Inoculation of cattle against tick fevers has been carried out on an extensive scale. The good season has favoured the multiplication of ticks in those areas where their numbers are usually limited, with the consequence that occurrences of tick fever have been numerous.

The standard method of inoculating now practised is to inoculate with *B. argentinum*, *P. bigeminum*, and *A. centrale* at the one inoculation. It is found that, although the reactions may be severe, they can be controlled by acaprin. This refers to the first two organisms. This drug is now very widely used everywhere in the control of tick fever in this State.

The number of stud bulls submitted for immunisation was limited. This was due largely to the lower prices paid for beef. The industry has not been in a flourishing condition since the war of 1914-1918, and prices paid to-day for first-grade beef are actually lower than they were a quarter of a century ago, when costs of production were considerably lower. The decline of the beef industry is being accelerated by the progress of the dairy industry. There is little doubt that this acceleration would be even greater were it not for the fact that much of the land (Gulf country) now under beef production is not suitable for dairying.

Poison Plants.—A considerable amount of work has been carried out on poison plants under the ægis of the Poison Plants Committee of the Department. One of the most important findings has been the discovery that soda bush (*Threlkeldia proceriflora*), a plant very common in the western sheep areas, is very poisonous for sheep. It has been found that, ordinarily, sheep do not touch the plant, but when starved, as after long train journeys, they will eat it quite readily. There seems no doubt that this plant has been the cause of frequent heavy losses which have occurred with untrucked sheep in the Longreach and Ilfracombe districts.

Hoya australis, another plant common in Southern Queensland, has also been found to be poisonous for sheep.

Tuberculin Tests.—Tuberculin tests, using certain synthetic products intradermally, are now in progress, and some of the results have been quite satisfactory. If this type of tuberculin proves suitable for this State, it will greatly facilitate the tuberculin testing of herds in the dairying areas. The incidence of this disease is high in some of the herds in the dairying districts.

JOHN LEGG,
Senior Veterinary Officer.

REPORT OF THE ANIMAL NUTRITION RESEARCH OFFICER.

The determination of digestibility co-efficients for foodstuffs commonly employed in Queensland has been continued. Although the number of trials conducted is not yet sufficient to permit of tables being drawn up, some generalisations may be made. The average composition and digestible nutrients in Queensland-grown cereals agree well with those for grain of similar quality listed by English and American workers. The apparent digestibility of protein in the seed cake preparations and meatworks by-products is high. Comparison with overseas figures suggests that the quality of the best lines sold reach a very high standard.

In any broad programme of work, incidental problems demanding attention arise. This has been abundantly true of the investigations under way. Some of these have been of sufficient economic importance to merit systematic exploration:—

(1) In attempts to make direct determinations of digestible nutrients in concentrates, the question of how long sheep may be kept satisfactorily on a fibre-free diet arose. Apart from its scientific interest, the practical importance of this point in times of extreme drought is obvious. The well-known deficiencies of farinaceous foods precluded their use. Meat meal was selected. A method for overcoming their natural dislike for this food was devised, and the animals eventually were placed on what is virtually a fibre-free diet containing over 60 per cent. of crude protein. To date—after thirty weeks—no ill effects are obvious. The growth and quality of the wool are remarkable.

(2) The favourable winter in the areas from which certain of the grasses under investigation are obtained, resulted in a low residual soil nitrogen for summer growth. The resulting grass was sufficiently low in protein to introduce appreciable errors in digestibility work. For the sake of comparison, with previous samples of grass it has become necessary to investigate the endogenous nitrogen excretion of the animals used in this work—merino sheep. From this it should be possible to state the minimum daily protein intake for sheep on "bare country" in times of drought.

A series of drought-feeding trials has been laid down. The design of the experiment is intended to represent severe drought conditions. The foodstuffs used either singly or in combination are the staple carbohydrate concentrates produced in Queensland—maize, wheat, sorghum and molasses—and the protein sources are represented by both vegetable and meat by-products.

It is expected that when these experiments are concluded a statistical examination of data obtained will enable standard recommendations to be made for drought feeding in Queensland merino sheep country.

During the year under review, the substantial increase in enquiries has shown that producers are appreciative of the benefits that accrue from sounder feeding practices.

MONTGOMERY WHITE,
Animal Nutrition Research Officer.

ANIMAL HEALTH STATION, OONOONBA.

The administration of veterinary services and control of animal diseases in that portion of the State extending from Mackay to Thursday Island, and from the coast to the North Australian border, was organised from Townsville. This vast area has been divided into three divisions—a central division with headquarters at Townsville, a northern division with headquarters at Atherton, and a western division with headquarters at Cloncurry. The Animal Health Station is situated at Oonoonba, close to Townsville, and its staff includes three veterinary officers, in addition to technicians and clerical officers. A fourth veterinary officer is stationed at Atherton, the centre of a progressive dairying district. Each of the divisions is serviced by a district inspector and a number of stock inspectors.

The activities of the Animal Health Station include—

(i.) Diagnostic and advisory services for field officers, farmers, pastoralists, and other interested sections of the community;

(ii.) The preparation and distribution of vaccines;

(iii.) Poison plant investigations;

(iv.) Research work on animal diseases and animal production;

(v.) The administration of veterinary services and control of animal diseases in North Queensland.

ROUTINE DIAGNOSES AND ADVISORY SERVICES.

The number of specimens submitted to the station in the course of the term was on a par with that for the preceding year. As a large area of country served by the station is utilised in cattle raising, both for dairy and beef production, most of the specimens submitted for examination were of bovine origin. Specimens also were received in respect of outbreaks of disease in sheep, pigs, horses, poultry, and dogs. The most important of these diseases were:—

Contagious Pleuro-pneumonia. — Specimens were forwarded to the station following outbreaks and suspected outbreaks of this disease for confirmation of the field diagnosis. Seveal specimens of diseased lung were received from slaughtering establishments, and cultures of the organisms were obtained for submission to the Council for Scientific and Industrial Research in connection with special research work on this disease. Some of these samples were from encapsuled lesions, while others were from acute generalised cases of the disease. As the brands and histories of the diseased cattle were recorded, the submission of such samples also served to indicate the extent of country in which the disease is continually causing losses.

Tick Fever.—Numerous specimens were submitted in connection with outbreaks of tick fever. These specimens served to confirm the diagnoses made by field officers and were of particular interest in relation to the estimation of the relative importance of the various tick fever organisms causing the field cases. In each case in which a positive diagnosis was made in the course of the year, the causal organism was found to be *B. argentinum.* This confirms the findings of previous years, and further demonstrates that *B. argentinum* is by far the most important tick fever organism.

Mammitis.—The examination of numerous milk samples, submitted chiefly from the Atherton Tableland and Innisfail, indicates that this disease is prevalent in those regions. The organisms most commonly isolated from the milk samples were streptococci and staphylococci. Autogenous vaccines were frequently prepared for prevention of the disease in individual herds, following the isolation of these organisms.

Contagious Abortion.—Blood and sera samples forwarded from suspected cases of contagious abortion disease were submitted to the agglutination test at the station. Positive diagnosises were made and evidence is forthcoming that the disease is not uncommon in the dairying districts.

Mineral Poisons.—Several serious mortalities in which mineral poisoning was suspected were investigated in the course of the year and specimens from these cases, after examination, were sent to the Agricultural Chemist for analysis. Many positive findings for arsenic were recorded. The investigations indicated that animals obtained arsenic from the vicinity of cattle dips, from areas where weeds and noxious plants had been poisoned, and from arsenic containers which had been left inadvertently or carelessly in paddocks where the animals had been grazing.

Several specimens also were received from animals which had died from plant poisoning, and the most important plants concerned were lantana (*Lantana camara*), noogoora burr (*Xanthium strumarium*), caustic vine (*Sarcostemma australe*), in the case of cattle, and yellow daisy (*Wedelia asperima*), in the case of sheep. Specimens were examined from cases of death among sheep and cattle, and Georgina gidgea (*Acacia georgina*) was suspected as the cause of the trouble.

Diseases diagnosed from animals and specimens received at the station were:—Ephemeral fever, internal and external parasites, contagious pneumonia and white scours, tuberculosis and malignant growths—bovines; internal and external parasites, yellow big-head, tetanus—sheep; encephalitis, swamp cancer, tetanus—horses; contagious pneumonia, ulcerative granuloma, peritinitis, internal parasites—pigs; fowl pox, spirochætosis, black-head—poultry; internal parasites, including hookworms and heart-worms, rickets and distemper—dogs.

Numerous written enquiries concerning the diagnosis and treatment of cases of disease in individual animals were received. A number of animals, comprising chiefly dogs and horses, also received veterinary attention at the station.

PREPARATION AND DISTRIBUTION OF VACCINES.

Doses of contagious pleuro-pneumonia vaccine, numbering 102,750, were prepared by the Council for Scientfic and Industrial Research, and distributed from the station. A large amount of this vaccine was used to prevent outbreaks of contagious pleuro-pneumonia in store cattle on the road, while preventive inoculation of station cattle also was widely practised. A small quantity was also used to control outbreaks of the disease. Most of the inoculated animals were kept under observation by owners, drovers, or stock inspectors for several months and particulars were obtained of severe reactions and any breakdowns in immunity. It was ascertained that the percentage of severe reactions was very low and mortality, as a result of the inoculations, was practically nil.

The information obtained suggests that a strong resistance was developed as a result of the inoculation, for no serious outbreaks of the disease were encountered in the treated animals.

Tick Fever Vaccine.—Approximately 1,000 doses of tick fever vaccine were distributed in the course of the year. In addition, a bleeder was sent to the Georgetown district for inoculation of ''clean'' cattle prior to their removal to tick-infested pastures. Most of the tick fever vaccine supplied from the station contained the two organisms *P. bigeminum* and *A. ventrale*, but towards the end of the year a vaccine containing three organisms—*B. argentinum*, *P. bigeminum*, and *A. centrale*—was used in selected cases. Doses of triple vaccine numbering 95, were used, and four deaths occurred as a result of this inoculation. Approximately 900 doses of double vaccine were used, and the mortality from this inoculation was in the vicinity of 0·5 per cent.

Stud animals numbering 19 were inoculated at the station. All were treated first with the double vaccine, and subsequently were inoculated with a vaccine containng *B. argentinum.* In only one case was reaction to the latter organism detected, and this was by no means severe. No mortality occurred among the stud animals, either at the station or afterwards, when turned on to tick-infested pastures.

Doses of acaprin numbering 323, were distributed from the station for the control of tick fever. The value of this drug is widely recognised, and it has undoubtedly been the means of saving many cattle.

Contagious Mammitis.—Doses of contagious mammitis vaccine, numbering 1,276, were prepared and distributed. A large percentage of this vaccine was prepared from organisms isolated from special outbreaks. A stock vaccine is also prepared at the station and submitted to owners when it is not possible to isolate an organism from an outbreak on their properties.

The vaccine was used more for prevention than for cure of the disease.

Blackleg.—Doses of blackleg vaccine, numbering 1,160, were prepared by the Commonwealth Serum Laboratories, and distributed from the station to stock owners in the Bowen and Mackay districts, who reported satisfactory results in the prevention of blackleg following the use of this vaccine.

Tetanus.—Units of tetanus anti-toxic serum, numbering 44,000, were distributed from the station. A large amount of this serum was used for prevention of tetanus in horses after injuries.

Doses of tetanus toxoid, numbering 115, also were used. Most of the treatments were applied to horses on the Atherton Tableland, while some were also used at Townsville and Bowen.

Poison Plant Investigations.

Work in connection with the investigation of suspected poisonous plants was done throughout the year. On numerous occasions, deaths in sheep and cattle and, to a lesser extent, in horses and pigs, were reported and several plants came under suspicion. When it was possible to obtain sufficient of the suspected material, a feeding trial was conducted to ascertain the possible cause of death.

Grass Tree.—The plant commonly known as grass tree (*Xanthorrea spp.*) and which grows chiefly along the coastal areas of North Queensland, also was a subject of investigation. It has been suspected of causing blindness, wasting, and paralysis in cattle and, with this aspect in view, a trial was carried out, using a steer whch was fed with 344 lb. of the suspected material over a period of 35 days, with negative results. In this trial the green foliage was used. Further experiments are to be conducted with the flowering portion of the tree.

Golden Shower.—The tree known as Golden Shower (*Cassia fistula*), and possessing a pod not unlike a cascara bean, also was the subject of a feeding trial, in which the fruit and beans were fed to cattle, and of which results were negative.

Cassia nodosa.—This tree, like *Cassia fistula*, is used for decorative shade purposes, and a feeding experiment was carried out to ascertain if the foliage were harmful to stock. It proved to be very unpalatable, and amounts up to 12 lb. caused no harmful results to bovines.

Eremophila latrobei.—This plant belongs to the fuchsia family, which is known to possess poisonous principles. It has been suspected of causing death in sheep, and the feeding trial carried out at the station proved positive; 2 lb. fed to a sheep was fatal.

Acronychia acidula.—The fruits of this tree (a lime) have been suspected of causing digestive and other disturbances when eaten by pigs. A feeding trial in which a pig ate 35 lb. of the fruit proved negative.

Poison Peach.—Poison Peach (*Trema aspera*) for a long time has been suspected of causing death in cattle. Amounts of 5 and 10 lb. of chaffed leaves proved fatal to steers, death taking place two days after the plant was eaten. The plant also was found to be toxic for goats.

Devil's Fig.—Devil's Fig (*Solanum torvum*) belongs to a family which possesses many poisonous members. An investigation with this plant was carried out with both a horse and a bovine, using the whole plant and berries separately. In the case of the horse, the feed was obviously distasteful, and, despite considerable starvation, none of the plant was eaten. With the bovine, a small portion of the whole plant was eaten without relish, but on using the berries alone a comparatively large amount (4 lb.) was eaten within 24 hours, with negative results.

Lantana spp.—Although numerous experiments have been conducted with the different species of lantana, the results differ according to locality. At the station, cattle were used for the purpose of feeding the pink variety (*Lantana camara*) and the golden red variety (*Lantana camara, var. crocea*). The first named proved fatal, while *var. crocea* was found to be innocuous.

Zamia Palm.—Further experiments with the plant commonly known as Zamia Palm (*Cycas media*), were conducted. Using cattle, it was found that the fruits (nuts), caused a severe gastro-enteritis, while the mature leaves had no effect. However, on using the young green leaves, results were obtained which indicate that this portion of the plant produces a posterior paralysis.

Palatability Trials.—Palatability trials with introduced legumes—*Stylosanthes guyanensis, Dolichos hosei, Phoseolus calcaratus, Dolichos Dehilis*—also were conducted. The plants were chaffed and fed separately, as well as in a mixture with other plants frequently used in North Queensland pastures. All the plants proved palatable to bovines, Brazilian lucerne (*Stylosanthes guyannensis*) in particular being eaten with relish.

RESEARCH WORK ON ANIMAL DISEASES AND ANIMAL PRODUCTION.

Tick Fever.—Investigations were continued to gain information on the value of a double (*P. bigeminum* and *A. centrale*) and a triple (*B. argentinum, P. bigeminum* and *A. centrale*) tick fever vaccine for immunisation against tick fever.

Station cattle numbering 150, which were definitely known to be susceptible to tick fever, were inoculated with the double vaccine and kept under observation for two months on tick-free pastures, and then removed and kept under observation for a further two months on tick-infested pastures. No deaths resulted from the inoculation, but an outbreak of tick fever (due to *B. argentinum*) was experienced after removal of the stock to tick-infested pastures. Approximately 20 cases of the diseases were detected, and a mortality of seven head was experienced before the use of acaprin to control the outbreak. Results of these observations indicate that inoculation with a double vaccine had a definite value in reducing the incidence of the disease—due to *B. argentinum*—following exposure to tick infestation, but that the resistance is not absolute and may break down in from 10 to 20 per cent. of the animals exposed to infestation.

A limited number of susceptible animals was inoculated with the double vaccine and after the *P. bigeminum* reaction, inoculated with *B. argentinum*. In this group, only one animal out of ten reacted to *B. argentinum*, and this was a mild reaction. No breakdown in resistance was recorded following exposure to tick infestation.

A third group of 90 mixed cattle was inoculated with a triple vaccine. The animals were not kept under close observation so that treatments could be carried out, and a mortality of four animals was reported as a result of the inoculation. No further mortality was recorded after exposure to ticks.

The foregoing observations suggest that the double vaccine produces a mild reaction with little, if any, mortality, but the resulting resistance to *B. argentinum* is not so solid as that produced by the triple vaccine which, however, produces more severe reactions with an occasional death.

Observations in progress at the station in co-operation with the Council for Scientific and Industrial Research to ascertain if anaplasmosis can be transmitted by natural means in a tick-free environment in North Queensland, was advanced a further stage. One unexplained case of anaplasmosis was detected, but it was not possible to explain the method of transmission.

Peg-leg Experiment.—An experiment to gain information on the value of mineral supplements and the most suitable method of supplying these supplements to cattle in the Charters Towers district, where sysmptoms of mineral deficiency are frequently encountered, is being continued in collaboration with the Council for Scientific and Industrial Research.

Beef Production.—Information was collected during the year on the reaction of animals on a western fattening area to their environmental conditions. It was ascertained that a period of rapid growth and increase in weight and condition was experienced, following the onset of the wet season and the appearance of green pastures. The peak was reached in May and was followed by a period extending over several months during which the animals remained at a constant weight, or showed a slight decrease. This was followed by a period in which a farly rapid decrease in weight was noted, and which occurred towards the end of the dry season, when there was a scarcity of feed. It continued until the fresh growth of pasture appeared shortly after the commencement of the wet season.

Observations have continued on cattle grazing on artificial pastures in the Tully and Innisfail districts on the coastal wet belt. The animals in this area continued to show progressive increases in weight throughout the year. Some of the experimental animals reached prime condition and were marketed in September and December. All the animals were up to the chilled beef standard, and the 60 head marketed during the period graded approximately 80 per cent. first quality and 20 per cent. second quality. These animals were marketed when prime cattle were scarce and difficulty was being experienced in obtaining first quality carcasses.

Drafts of weaners and two-year-old steers were placed on the experimental pastures in August, 1938, and have since been kept under observation. Both groups have made satisfactory progress, and some of the steers which were rising three years old in June, 1939, are approaching prime condition.

The excessively heavy wet season in the Tully area did not affect the cattle to any marked extent, although the pastures deteriorated slightly as a result.

Dehorning.—Information on dehorning of cattle was collected during the year. Animals of ages varying from two weeks to five years were used. Those over twelve months old showed a slight loss of condition as a result of the operation, particularly if the wounds became fly-blown, but the setback is only temporary and no mortality had been recorded from several hundred animals which have been dehorned. Very little inconvenience is experienced by animals under twelve months old as a result of dehorning.

Different types of dehorners were used according to the age of the animal. Young animals up to a month old were treated by enucleating the horn bud with a knife, followed by the application of a searing iron or a caustic solution. Alternatively, in animals up to this age dehorning may be performed merely by the application of a hot conical-shaped searing iron which fits over the horn bud. This method has the advantage that no open wound is made, but a certain amount of skill is required to ensure that the horn-forming tissue is completely destroyed. For animals from one to twelve months old, some form of cutting dehorner is necessary to ensure satisfactory results.

VETERINARY SERVICE AND ANIMAL HEALTH CONTROL IN NORTH QUEENSLAND.

Contagious Pleuro-pneumonia.—Seven outbreaks of contagious pleuro-pneumonia were reported. Six of these occurred in the Central division and one in the Western division. All were successfully controlled by quarantine and inoculation. A comparatively high morbidity rate was reported from one of the outbreaks, because of delay in inoculation, but, in all other cases, the disease was successfully brought under control by quarantine and inoculation of all infected and in-contact animals. The economic importance of this disease, however, cannot be estimated from the reported outbreaks. Information collected at slaghtering centres indicates that the disease must be present more or less continuously in an enzootic form over a large area of the Gulf and Peninsula cattle country, and it would be difficult to estimate the annual losses from this disease. The present methods of beef production in North Queensland, where cattle range over large tracts of unfenced country, make the elimination of contagious pleuro-pneumonia impracticable. Control measures in the form of preventive inoculation are widely practised. Practically all store stock from this region are inoculated prior to being travelled, while on some properties the annual inoculation of all stock is being adopted as a routine procedure.

Both contagious pleuro-pneumonia vaccine, as prepared by the Council for Scientific and Industrial Research, and natural virus are being used, but there are indications that the prepared vaccine is more favoured than the natural virus.

Tick Fever.—Deaths from tick fever, although not so severe as in former years, were again the cause of severe economic losses to both the grazing and dairying industries. Individual cases in valuable stud animals, or general outbreaks of this disease were reported from several centres during practically every month of the year. One serious outbreak was encountered following the entry of a mob of susceptible cattle on to tick-infested pastures, but this was checked by dipping, prompt removal of the cattle from the infested pastures, and the treatment of the infected animals.

The area in which losses from this disease were most frequently encountered was in the vicinity of the tick-free and tick-infested country. The degree of infestation in these areas varies from year to year, according to seasonal conditions. In certain of these areas, and more particularly along the Great Northern Railway line, between Charters Towers and Julia Creek, infestation spread to areas which had been free for some years, with the result that several outbreaks of the disease were encountered. Most of these were brought under control by dipping, preventative inoculation and treatment with acaprin.

In the Atherton and Mackay districts, outbreaks were reported following the re-entry of ticks to properties which had been freed of this parasite by repeated dippings. Being dairy properties, these outbreaks were brought under control immediately a diagnosis was made.

All outbreaks of tick fever from which specimens were collected and the casual organism detected, were due to *B. argentinum*. Acaprin again proved very valuable in controlling outbreaks of this disease.

Tick infestation was once more in evidence, particularly on the Gulf and coastal stations. In these areas, it was necessary to dip practically all the year round to keep the parasites in check, and it also was found necessary to place certain restrictions on travelling stock to prevent the spread of the parasite.

Tuberculosis.—Additional data available as a result of the year's activities confirmed previous information to the effect that the percentage of cattle and pigs in North Queensland affected with tuberculosis is low. Climatic factors may have no small influence, but the absence of hand-feeding (except in a very small measure), coupled with natural running water for drinking purposes in much of the more heavily populated country, contribute undoubtedly to this state of affairs.

The tuberculin test was applied on a more extensive scale than in the pervious year, and for the first time it becomes necessary to discuss the results obtained in respect of both beef and dairy cattle. With regard to beef cattle, it can be stated that inordinate condemnations at treatment centres have forced some owners to take action aimed at reducing the incidence of tuberculosis in their cattle. The difficulties attendant on any attempt at eradication are almost insuperable on many of the large holdings, and would necessitate the presence of a veterinarian for extended periods. A total of 1,747 cattle belonging to the beef breeds was submitted to test on four different properties, and 47, or 2·1 per cent., reacted.

The Tubercle-free Herd Scheme under the terms of which dairy cattle are tested for tuberculosis, continues to attract widespread attention from dairy farmers. Five new herds were submitted to test, 109 animals being involved, and all found negative to the test. Re-testing was undertaken in eight herds which had previously participated in the scheme, in some cases for as long as four years. In this group 497 animals were tested and 3 reactors (0·6 per cent.) detected. Finally, tests were carried out on cows introduced into tubercle-free herds. All in all, 871 tests were applied to 702 animals. These figures include a small amount of testing carried out on stud dairy bulls for which rebate of railway freight was claimed.

With pigs, it is the practice for condemnations because of tuberculosis at the North Queensland bacon factory and local slaughter-yards to be traced back to the farm of origin. A clinical examination of the cattle and pigs follows, and where suspicious animals are found the tuberculin test is applied. Clinical cases of tuberculosis in cattle are rarely met with, and the number of suspicious cases submitted to the test is small, but the practice of following up pig condemnations is of great value from another point of view—the establishment of contact between the veterinary officer or inspector of stock and the owner. A visit arising out of the condemnation of pigs for tuberculosis frequently results in disease control measures of a highly diversified nature being put into operation.

Buffalo Fly.—Following the early wet season the buffalo fly made its appearance on several properties in the Gulf during November and December, 1938, and by the time the annual survey was carried out in April, at the end of the wet season, it had spread considerably, although it was still within the bounds of the 1932 quarantine area. The prolonged wet season yielded optimum conditions for the spread of the fly with the result that prior to the movement of cattle it was found as far east as the Flinders River and about 100 miles south from the Gulf coast. It was carried into Kajabbi by travelling stock early in June, with the result that it became necessary to spray all cattle with a repellant solution immediately before their departure by rail from that centre. The trucks used by these cattle also were subjected to special sterilization at their destination to destroy any eggs or larvæ which may have been deposited in the fæces in the trucks, or had survived treatment at the trucking centres. The movement of animals within the quarantine area also was controlled, and no animals were allowed to leave the area on the hoof during the period of infestation.

Ephemeral Fever.—A widespread outbreak of ephemeral fever was recorded. The disease was reported from practically every centre in North Queensland during January, February, and March. A high morbidity rate was experienced among animals up to three years old, and a small percentage of older animals also was affected. The mortality rate was low and the disease did not assume the economic importance of the outbreak of 1936-37, as it occurred at a time of the year when very little mustering was being done on station properties, and also in dairying districts among animals which mostly had not reached production age. An interesting feature of this outbreak was that the first cases occurred shortly after the onset of the wet season, and the disease had practically disappeared by the end of the wet season.

Contagious Mammitis.—Contagious mammitis is very widespread and frequently reported from dairy herds in the Atherton, Cairns, Innisfail, Townsville, and Mackay districts. This disease is of great economic importance, and is probably the cause of greater losses than any other disease among dairy cattle.

Sterility and Contagious Abortion.—Investigations into causes of sterility in dairy herds were made in the Atherton, Innisfail, and Ingham districts. The most important disease encountered was contagious abortion, and positive diagnoses were made in several herds, following the submission of sera samples to the Animal Health Station, Oonoonba.

No extensive plan of elimination has, as yet, been attempted in the North Queensland area, but control measures in the form of segregation of affected animals, disposal of infective material, together with improved hygiene, are being practised to minimise the effects of the disease.

In other cases of sterility, contagious vaginitis was diagnosed and the disease brought under control after suitable treatment.

Deficiency Diseases.—Deficiency diseases were investigated in the Charters Towers and Hughenden districts, where the diseases are locally known as peg-leg and hooky-hooky, respectively. An extensive area of country is involved in each district, and the annual mortality among breeding stock is heavy. The losses usually occur near the end of the dry season. The administration of a mineral supplement, together with changes in management, have been recommended for the control and prevention of this disease, and some good results have already been reported.

This disease also occurs on coastal areas, where again good results have been recorded following the use of mineral supplements.

Internal Parasites of Cattle.—A severe mortality of cattle was reported from the Ayr district, and an investigation indicated that *Hæmonchosis* was the cause of the trouble. Repeated treatments with suitable medicaments were followed with favourable results.

Blackleg.—Blackleg in calves was reported from Bowen and Mackay districts. Preventive inoculation was practised in these areas.

Diseases of Horses.—An unusual disease of horses, in which *encephalitis* was a prominent symptom, was investigated in the Bowen district. There is a strong suggestion that the disease is contagious, and several cases have been reported from one property. The mortality rate is high.

Walkabout disease in horses was reported from the Cloncurry district. The incidence of this disease varies from year to year, and cases usually appear shortly after the onset of the wet season.

Tetanus is very prevalent among horses in the coastal district from Townsville to Cairns, and on the Atherton Tableland. Valuable animals were regularly treated with tetanus anti-toxic serum following injuries, while the use of tetanus toxoid in the prevention of this disease is now being widely practised.

The incidence of swamp cancer or tropical ulcer was unduly high among horses in the Ingham, Tully, and Innisfail districts during February, March and April, following an exceptionally wet season. Most of these cases were treated surgically with satisfactory results. This disease causes inconvenience and considerable losses among horses used in the sugar industry.

An outbreak of strangles was reported from the Cairns district and was brought under control by prompt quarantine and isolation of infected animals.

Diseases of Sheep.—Two deaths of rams shortly after arrival from New South Wales were reported from the Cloncurry and Hughenden districts. There is a suggeston that in one case death was due to plant poisoning, but the possibility of transit diseases cannot be overlooked.

Pregnancy toxæmia of ewes was reported from the Hughenden district. The losses from this disease are continually evident and are responsible for the deaths of a large number of sheep every year.

Two outbreaks of tetanus among sheep immediately after shearing were reported. The first occurred in the Townsville district and the second in the Julia Creek district. Both ceased within a fortnight of shearing.

Two outbreaks of yellow big-head were recorded from the Hughenden district. This disease appeared shortly after the onset of the wet season, when there was an abundance of green feed and the weather was humid and changeable.

Two severe mortalities of sheep involving 300 and 400 deaths in two separate mobs were investigated and were strongly suggestive of poisoning by the yellow daisy (*Wedelia asperima*). In both cases mortality ceased when the sheep were shifted to another paddock.

Lice infestation of sheep continues to be serious in the Hughenden district. Quarantine and dipping of infested animals are being carried out to control this parasite.

A mortality also was reported from the Hughenden district as a result of grass seed irritation, lice infestation, and general poverty. Approximately 2,500 head died in a mob of 6,000.

Diseases of Pigs.—Several outbreaks of contagious pneumonia were recorded. Most of the outbreaks were reported from the Atherton Tableland, and the disease also was encountered in the Ayr and Townsville districts. Contagious pneumonia is by far the most serious disease in pigs in North Queensland, and is responsible for severe economic losses each year.

An unusual disease of pigs in which peritonitis and pericarditis were prominent symptoms was reported from the Atherton Tableland. Several outbreaks of the disease were encountered and it was the cause of a limited mortality in certain piggeries.

Other diseases of pigs encountered on the Atherton Tableland were posterior paralysis, ulcerative spirochætosis, nutritional anæmia, sterility amongst sows, and infestation with internal parasites.

Diseases of Poultry.—Several outbreaks of fowl-pox were encountered in North Queensland, chiefly from the Mackay, Townsville, and Atherton districts. Preventive inoculation, with indifferent results, was practised for the control of this disease.

One outbreak of spirochætosis in fowls was recorded from the Cairns district, and mortality due to internal parasites was encountered in Townsville.

A disease resembling black-head in turkeys was the cause of a heavy mortality among these birds in the Hughenden district.

C. R. MULHEARN,
Acting Director.

REPORT OF THE SEEDS, FERTILIZERS, VETERINARY MEDICINES, PEST DESTROYERS AND STOCK FOODS INVESTIGATION BRANCH.

The following table contains a summary and comparison of the year's work of this branch with the work for the last two years.

—	1937.	1938.	1939.
Licenses issued	589	589	697
Registrations effected ..	1,569	1,738	1,847
Samples received from—			
Inspectors of this Branch	3,277	4,400	3,667
Chief Quarantine Officer (plants)	70	43	38
Dealers	2,258	2,488	2,560
Buyers	43	108	61
Government Departments	230	239	340
Referee, Repeat, and Experimental tests	1,203	780	755
Correspondence — Letters, pages	5,151	5,416	7,135
Analysis carried out for this Branch by the—			
Agricultural Chemist ..	425	529	283
Animal Health Station ..	..	..	1
State Health Department	..	..	2

INSPECTIONAL DUTIES.

In the course of the year, in addition to supervision in Brisbane, visits were made by inspectors under the several Acts administered by this Branch to the following places:—Aspley, Atherton, Bald Hills, Bouldercombe, Cairns, Charleville, Chermside, Chinchilla, Cleveland, Cunnamulla, Dalby, Gladstone, Gordonvale, Innisfail, Ipswich, Killarney, Kingaroy, Malanda, Mareeba, Miles, Millaa Millaa, Mitchell, Murgon, Petrie, Redland Bay, Rockhampton, Roma, South Johnstone, Stanthorpe, Strathpine, Tannymorel, Toowoomba, Warwick, Wondai, Yangan, Yeppoon.

When it is realised that practically every storekeeper in Queensland sells seeds, fertilizers, veterinary medicines, pest destroyers, and/or stock foods, the question of policing the Act is obviously an undertaking of some magnitude. With the extra assistance now in training it is expected, however, to be in a position to gradually tighten up the application of the Acts.

PUBLICATIONS.

The following contributions by members of this Branch were made to the "Queensland Agricultural Journal":—"Seeds Every Farmer Should Know"—Noogoora Burr, Bathurst Burr, and Castor Oil Bean; "Lime for Agricultural Purposes"; "Dusting Preparations for Pest Destruction"; "Stock Licks and Mineral Feeds Registered for 1938"; "Rice By-Products"; "Sampling of Seeds."

In addition, eighteen contributions were published in the "Weekly News Bulletin."

EQUIPMENT.

Additions to laboratory equipment included—A drying oven capable of operating at any temperature between 40 deg. and 100 deg. C.; one Sauter's analytical balance.

SECRET INGREDIENTS.

It is astounding that in these enlightened days people still persist in the use of mystic "secret ingredients" which are, so the sellers claim, the "sure cure" for many troubles. Apparently the range of usefulness of these ingredients is only limited by the fertile imagination of the salesman. What is still stranger is the eagerness with which gullible people encourage, by their purchases, the sale of such preparations.

Certainly the vast majority of buyers of preparations which come under the Acts administered by this Branch are not keen on mysterious compounds, because of, it is claimed, increased knowledge of the purport of the legislation in force. The present-day farmer usually wants to know in plain English what is the composition of the preparation offered for sale.

ACKNOWLEDGMENTS.

The assistance rendered this Branch by the Agricultural Chemist and the Bacteriological Laboratory of the Department of Health and Home Affairs is hereby acknowledged.

SEEDS ACT.

During the year 5,638 samples were examined at the Seed Testing Station, the actual tests numbering 6,393. Details:—

Seed Samples Received from—	Number of Samples.
Inspectors under the Seeds Act	1,565
Inspectors under the Commerce Acts ..	1,995
Seed Vendors	1,573
Growers selling seed	98
Farmers who have purchased seed for their own sowing (examined free)	52
Government Departments	355
Repeat and experimental tests	755
Total germination tests	6,393

The number of seed samples received from vendors and inspectors, respectively, under the Seeds Act has increased by 218 in the former case, and decreased by 579 in the latter. The total of germination tests decreased by 340.

NON-COMPLYING SEEDS FOR SOWING.

The following table sets out the action taken under supervision of an inspector with respect to seeds which were offered for sale as seed for sowing, and were found not to comply with the standards prescribed on account of the reasons set out :—

Lots.	Quantity.	Kind of Seeds.	Reasons for Action.	Action Taken.
1	57 bags ..	Barley, Skinless	Excess weed seeds	Withdrawn from sale
1	29 lb. ..	Barley, Skinless	Low germination	Destroyed
5	257 lb. ..	Beans, Canadian Wonder ..	Low germination	Destroyed
1	10 bags ..	Beans, Canadian Wonder ..	Low germination	Crushed
1	1 bag ..	Beans, Canadian Wonder ..	Insect-infested	Crushed
1	2 bags ..	Beans, Mauritius	Low germination	Destroyed
1	30 lb. ..	Beans, Soya	Low germination	Destroyed
6	309 lb. ..	Beans, various	Low germination	Destroyed
5	54 lb. ..	Beet	Low germination	Destroyed
1	6½ lb. ..	Beet	Low germination	Seized and sealed
10	8½ lb. ..	Cabbage	Low germination	Destroyed
2	18 lb. ..	Carrot	Low germination	Destroyed
2	1 lb. ..	Cauliflower	Low germination	Destroyed
1	46 lb. ..	Cowpea, Black	Weevil-infested	Destroyed
6	6½ lb. ..	Lettuce	Low germination	Destroyed
1	4½ bags ..	Lucerne	Contained dodder	Seized and sealed
1	½ bag ..	Lucerne	Contained dodder	Destroyed
3	28½ bags ..	Lucerne	Low germination	Seized and sealed
5	5¼ bags ..	Mangel	Low germination	Destroyed
1	8 lb. ..	Mangel	Low germination	Seized and sealed
1	1 lb. ..	Marrow	Low germination	Destroyed
1	3 bags ..	Oats	Excess weed seeds	Crushed
3	6 lb. ..	Onion	Low germination	Destroyed
1	53 lb. ..	Onion	Low germination	Seized and sealed
2	1 lb. ..	Parsnip	Low germination	Destroyed
1	11 bags ..	Paspalum	Low germination	Destroyed
3	2 bags ..	Peas	Low germination	Crushed
1	20 lb. ..	Peas	Low germination	Seized and sealed
2	2 bags ..	Peas, Field	Excess inert matter	Withdrawn from sale
1	4 bags ..	Prairie	Contained Datura	Cleaned
5	2¾ bags ..	Pumpkin	Low germination	Destroyed
1	3 lb. ..	Radish	Low germination	Destroyed
3	3 bags ..	Rhodes grass	Low germination	Destroyed
1	2 bags ..	Rhodes grass	Low germination	Seized and sealed
1	½ bag ..	Rye corn	Low germination	Destroyed
3	102 lb. ..	Rye grass	Low germination	Destroyed
1	24 bags ..	Setaria	Contained Datura	Cleaned
2	66 lb. ..	Sorghum	Low germination	Destroyed
1	14 lb. ..	Sorghum	Weevil-infested	Destroyed
3	9 bags ..	Sudan	Contained Datura	Destroyed
1	1 bag ..	Sudan	Excess inert matter	Destroyed
2	1¼ bag ..	Sudan	Low germination	Destroyed
1	8 bags ..	Sudan	Contained Datura	Seized and sealed
1	3 lb. ..	Swede	Low germination	Destroyed
9	12 lb. ..	Tomato	Low germination	Destroyed
1	4 oz. ..	Turnip	Low germination	Destroyed
1	½ lb. ..	Watermelon	Low germination	Destroyed
6	26,196 packets	Vegetable and Flower Seeds ..	Low germination	Destroyed

DATURA.

Of seventeen bags of sudan seed, which were seized and sealed—as cleaning is impracticable —nine were destroyed and eight await destruction.

This poisonous weed seed was also found among prairie and setaria (panicum) seeds, which were cleaned under supervision.

DODDER IN LUCERNE.

It is again emphasised that Queensland-grown lucerne seed is not above suspicion as to dodder content, and that available cleaning machinery does not remove the seeds of this very objectionable plant.

Five bags of lucerne seed with an approximate retail value of £90 had to be seized and sealed because of the presence of the seeds of *Cuscuta* sp. (dodder). This certainly presents a big loss to the grower (a Queensland farmer), but it must always be remembered that unless firm control is exercised the spread of such parasitical plants as dodder and serious pests as *Datura* cannot possibly be checked; but the real remedy lies obviously in the hands of both grower and seller. Responsibilities in this connection are realised by most of those concerned, but until all are fully seized with the vital importance of clean seeds, the necessity for drastic action will remain.

LOW GERMINATION.

The quantity of vegetable seeds offered for sale as seeds for sowing which have to be withdrawn from sale under official supervision is still far too high. Hot, humid, summer weather may cause rapid deterioration of seeds—particularly carrot, beet, parsley, onion, and parsnip—unless properly stored. The storage of any seeds in a damp condition in airtight containers, or under other conditions which prevent free access of a moving current of air, is very risky.

A considerable quantity of lucerne seed had to be seized because of low germination; this seed, it transpired, was over two years old. The quality of seeds for sowing, is not improved by keeping. All seeds in Queensland should be sold from the last preceding harvest, and "carry over" must be avoided if the prescribed seed standards are to be maintained.

Kind of Seed.	*Aeschynomene indica*	*Amaranthus sp.*	*Anagallis arvensis.*	*Apium sp.*	*Argemone mexicana.*	*Atriplex sp.*	*Boerhaavia diffusa.*	*Brassica sp.*	*Centaurea melitensis.*	*Chenopodium ambrosioides.*	*Chenopodium sp.*	*Cnicus lanceolatus.*	*Convolvulus arvensis.*	*Cuscuta sp.*	*Datura sp.*	*Daucus sp.*	*Erigeron sp.*
Barley (Cape and Malting)																	
Barley (Skinless)								1									
Canary		1			1		2										
Clover (Red)																	
Clover (White)			1														
Cocksfoot																	
Cowpeas		1									1						
French Millet															1		
Japanese Millet		3									3						
Linseed																	
Lucerne		22			2	1	9	2	7		32	6		7			
Mitchell Grass							1										
Oats					2			5	3		2		1				
Panicum (*see Setaria*)																	
Paspalum dilatatum																	
Phalaris tuberosa											1						
Prairie Grass				1							1	2					
Rhodes Grass		5								1	7						2
Ryecorn																	
Rye Grass				1								1					
Setaria italica (Panicum)		3									2				1		
Sorghum		1															
Sudan Grass		12				1	1	3	4	1	10		1		34	1	
Townsville Lucerne																	
Wheat																	
White Panicum	3	10							1	1	9						

GRASSES.

Kind of Seed.	*Andropogon sp.*	*Aristida sp.*	*Avena fatua*	*Axonopus compressus.*	*Bromus maximus.*	*Bromus mollis.*	*Chloris pectinata.*	*Chloris truncata.*	*Chloris virgata.*	*Dichanthium sp.*	*Digitaria sanguinalis.*	*Diplachne sp.*	*Eleusine sp.*	*Eragrostis sp.*
Barley (Cape and Malting)			1											
Barley (Skinless)			1											
Canary														
Clover (Red)														
Clover (White)														
Cocksfoot														
Cowpeas			1					1	1		3			
French Millet											1			
Japanese Millet											2			
Linseed														
Lucerne											6			11
Mitchell Grass														
Oats			39		3	1								
Panicum (*see Setaria*)														
Paspalum dilatatum	1	1		14			1			1	3			
Phalaris tuberosa														
Prairie Grass			6		1		1							
Rhodes Grass	5	3	2				54	3	6	32	1	1	4	8
Ryecorn			1											
Rye Grass			1			1								
Setaria italica (Panicum)		1	2								4			1
Sorghum			1											
Sudan Grass		2	11								8			9
Townsville Lucerne														
Wheat			1											
White Panicum		1									29		1	

Kind of Seed.	*Eriochloa sp.*	*Festuca sp.*	*Lolium temulentum.*	*Panicum decompositum.*	*Panicum distachyum.*	*Panicum sp.*	*Paspalidium flavidum*	*Paspalum scrobiculatum*	*Rhynchelytrum repens.*	*Setaria glauca.*	*Setaria sp.*	*Stipa sp.*	*Tragus racemosus*
Barley (Cape and Malting)													
Barley (Skinless)													
Canary						3				1			
Clover (Red)													
Clover (White)													
Cocksfoot		1											
Cowpeas											1		
French Millet						1							
Japanese Millet											1		
Linseed													
Lucerne	1			3		25					6		
Mitchell Grass	1												
Oats		1	15							2			
Panicum (*see Setaria*)													
Paspalum dilatatum	2							1			1		1
Phalaris tuberosa													
Prairie Grass						1					1		
Rhodes Grass	10			6	1	16	1		15		10	15	
Ryecorn													
Rye Grass		6											
Setaria italica (Panicum)	1		1	2		4				4			
Sorghum			1								1		
Sudan Grass	4					4	2			7	10		4
Townsville Lucerne													
Wheat													
White Panicum	5			1		1				2	3		

Kind of Seed.	Grain and other seeds.	*Haloragis sp.*	*Hibiscus trionum.*
Barley (Cape and Malting)			
Barley (Skinless)			
Canary			4
Clover (Red)			
Clover (White)			
Cocksfoot			
Cowpeas			
French Millet			
Japanese Millet			6
Linseed			
Lucerne	1		10
Mitchell Grass			
Oats			
Panicum (*see Setaria*)			
Paspalum dilatatum			
Phalaris tuberosa			
Prairie Grass	1		1
Rhodes Grass			
Ryecorn			
Rye Grass			
Setaria italica (Panicum)			2
Sorghum			
Sudan Grass		1	30
Townsville Lucerne			
Wheat			
White Panicum		1	5

Kind of Seed.	*Hypochoeris sp.*	*Ipomoea sp.*	*Lepidium ruderale.*	*Lithospermum arvense.*	*Malva parviflora.*	*Malvastrum spicatum.*	*Malvastrum tricuspidatum.*	*Marrubium vulgare.*	*Medicago denticulata.*	*Melilotus indica.*	*Modiola multifida.*	*Papaver sp.*	*Plantago lanceolata.*	*Polygonum aviculare.*	*Polygonum convolvulus.*	*Polygonum Persicaria.*
Barley (Cape and Malting)				1												
Barley (Skinless)										2					5	
Canary					1					1				1	5	
Clover (Red)																
Clover (White)												1	2			
Cocksfoot																
Cowpeas		5														
French Millet																
Japanese Millet															7	
Linseed	1															
Lucerne			3			1	1	4					2	44	1	1
Mitchell Grass							1									
Oats				3					1	3				3	11	
Panicum (*see Setaria*)																
Paspalum dilatatum	1															
Phalaris tuberosa																
Prairie Grass			3	2				4	2	3	1			1	4	
Rhodes Grass			1			8	1									
Ryecorn															1	
Rye Grass	1									1					1	
Setaria italica (Panicum)															4	
Sorghum		1														
Sudan Grass		2	1			2		1	1	4				5	7	
Townsville Lucerne																
Wheat																
White Panicum		3	1			12	2							4	1	

Kind of Seed.	*Prunella vulgaris.*	*Rapistrum rugosum.*	*Raphanus Raphanistrum* P.	*Rumex acetosella.*	*Rumex sp.*	*Salsola Kali.*	*Salvia reflexa.*	*Salvia verbenaca*	*Sida rhombifolia.*	*Sida spinosa.*	*Sida subspicata.*	*Saponaria orientalis.*	*Silene gallica.*	*Silybum Marianum.*	*Sisymbrium orientale.*
Barley (Cape and Malting)		1													1
Barley (Skinless)		1													
Canary		1			5		1								
Clover (Red)					1										
Clover (White)	1			2	3								2		
Cocksfoot															
Cowpeas															
French Millet															
Japanese Millet					1		2								
Linseed															
Lucerne					19		1	1			1				
Mitchell Grass															
Oats		4	1	1	4										4
Panicum (*see Setaria*)															
Paspalum dilatatum					4										
Phalaris tuberosa															
Prairie Grass					2									2	
Rhodes Grass						8			1		4	3			
Ryecorn															
Rye Grass				1											
Setaria italica (Panicum)		1			1		3								
Sorghum															
Sudan Grass					6		1		2						
Townsville Lucerne									1						
Wheat															
White Panicum									8	1					

Kind of Seed.	*Solanum sp.*	*Sonchus sp.*	*Spergula arvensis*	*Stachys arvensis.*	*Stellaria media.*	*Tagetes glandulifera.*	*Tribulus terrestris.*	*Trifolium glomeratum*	*Trifolium minus*	*Urtica sp.*	*Vicia sp.*	*Xanthium pungens* P.	*Xanthium spinosum.* P.	*Zinnia sp.*	No. of Samples Examined
Barley (Cape and Malting)															23
Barley (Skinless)															23
Canary														1	10
Clover (Red)															6
Clover (White)									1						7
Cocksfoot															17
Cowpeas															125
French Millet															3
Japanese Millet				3											44
Linseed															3
Lucerne		1		1				1		1					181
Mitchell Grass															1
Oats		1					1				1				123
Panicum (*see Setaria*)															
Paspalum dilatatum						1									41
Phalaris tuberosa															3
Prairie Grass		1		2											30
Rhodes Grass					1					1					268
Ryecorn															9
Rye Grass															36
Setaria italica (Panicum)													1		[illegible]
Sorghum															[illegible]
Sudan Grass				5							1	1	2	1	[illegible]
Townsville Lucerne															1
Wheat															27
White Panicum	6			3											46

The above figures give the number of samples in which the weed seeds occurred.

P indicates prohibited.

FARMERS' SAMPLES.

Farmers who have availed themselves of the free examination and report service numbered fifty-two, a decrease of thirty-seven.

Some of the complaints involving the samples submitted were fully justified; the necessary action was then taken, which resulted in a satisfactory agreement being reached without resorting to legal action. In some cases refund of the money paid by the purchaser was made.

WEED SEEDS.

In comparison with the table of weed seeds found in samples of farm seeds examined at the seed-testing station, published last year, it will be observeed that eight kinds of weed seeds shown in the 1938 table are not listed in the current table. There are—*Bidens pilosa, Chrysanthemum leucanthemum, Echium vulgare, Rhagodia* sp., *Sorghum halepense, Tetragonia expansa, Chloris distichophylla, Chloris inflata.*

The following list of twenty-three kinds of weed seeds in this year's table were not listed last year:—*Aeschynomene indica, Anagallis arvensis, Atriplex* sp., *Convolvulus arvensis, Daucus* sp., *Andropogon* sp., *Chloris truncata, Diplachne* sp., *Festuca* sp., *Panicum distachyum, Paspalum scrobiculatum, Stipa* sp., *Geranium dissectum, Haloragis* sp., *Modiola multifida, Polygonum Persicaria, Prunella vulgaris, Salvia verbenaca, Stellaria media, Tagetes glandulifera, Trifolium glomeratum, Xanthium pungens, Zinnia* sp.

The following prohibited seeds were found in the course of the year, in respect of which suitable action was taken:—*Cuscuta* sp., *Datura* sp., *Xanthium spinosum, Xanthium pungens.*

The following is worthy of note in relation to crops found to be infested with weed seeds:—

Cowpeas.—*Ipomaea* sp. was present in eight samples, while a similar number contained small seeds such as *Amaranthus* and *Chloris* spp.

Paspalum dilatatum.—Fourteen samples contained seeds of *Axonopus compressus* (carpet grass).

Prairie Grass.—A large range of weed seeds was found, the most noteworthy being *Lepidium, Malva, Marrubium, Melilotus, Polygonum, Sonchus, Avena fatua* (wild oats).

Rhodes Grass.—*Amaranthus, Chenopodium, Malvastrum, Salsola* and *Sonchus* spp., were very prevalent; nineteen different kinds of grasses were also found.

Lucerne.—The most noticeable weeds were *Amaranthus, Boerhaavia, Chenopodium, Convolvulus, Digitaria, Panicum, Hibiscus, Polygonum, Rumex* spp., clearly indicating that more care is necessary in saving and cleaning the crop.

The Millets.—*Amaranthus, Chenopodium, Digitaria, Eriochloa, Hibiscus, Malvastrum, Polygonum,* and *Sida* spp., were found. The presence of *Amaranthus* and *Chenopodium* seeds in the millets clearly indicate that more drastic application of the Seeds Acts is necessary, in order to eliminate material which is so easily removed.

Oats.—*Avena fatua* (wild oats), *Lolium temulentum,* and *Polygonum Convolvulus* are very plentiful.

Sorghum.—This easily cleaned seed contained *Amaranthus, Avena fatua, Lolium temulentum, Setaria,* and *Ipomaea* seeds, all of which could be avoided by the intelligent use of a cleansing machine.

Sudan.—Samples examined were very weedy, and action is called for by those interested. *Amaranthus, Avena, Panicum, Hibiscus, Polygonum* spp., and the prohibited seeds of *Datura* sp. are most numerous; in all, thirty-eight different kinds of weeds were found.

Reviewing the incidence of weed seeds as a whole, it has to be recorded that both seller and buyer are not, apparently, exercising the degree of care that should be used where weeds are concerned.

Whenever the presence of *Datura* or dodder is detected immediate action is taken to seize the bulk of such seeds, which means a loss to both the grower and vendor, both of whom can help to eliminate these objectionable and deleterious weeds. As this table indicates, the presence of weed seeds is a difficulty which can only be solved by clean farming and the intelligent use of cleaning machinery.

To obtain an illustration of how necessary is the use of efficient cleaning machinery, it is only necessary to refer to the table and note that small seeds, such as *Amaranthus* and *Chenopodium,* appear in the millets, sudan, and cowpeas. The contrast in size between these crop seeds and the weed seeds is amazing.

TOBACCO SEED STERILISATION.

In accordance with the arrangement by which this Branch sterilises the tobacco seed distributed by the Department, thirteen lots, weighing 18 lb., were treated with silver nitrate solution.

GOOD SEEDS.

Although nearly everyone will agree that better seeds mean better crops, it should not be overlooked that better cultivation means better seeds.

Seeds to be good must have a high germinating capacity, be true to variety name, and free from weed seeds, inert matter, and diseased or insect-infested seeds. No matter how careful the grower may be, all crops will contain some plants other than the ones which it is intended to produce. A cleaning machine should, therefore, be used before the seed is offered for sale. In Queensland, as in every part of the world, the most critical buyers will be found to be merchants with efficient cleaning machinery.

A modern seed-cleaning plant can make good samples of "as grown seeds" better, but it seldom makes bad samples good. With a full knowledge of their machinery possibilities, most merchants are willing to buy on a clean-seed basis; they are not, however, inclined to purchase poor samples, and the usual market for seeds of indifferent quality is with dealers who have little appreciation of impurities.

The actual seed user who insists on buying his supply on a price rather than a quality basis encourages the vendors of goods of inferior quality. Unfortunately, seeds of indifferent quality usually carry a large profit to the seller.

Good seeds cost money to produce and money to clean, and the general improvement of farm seeds rests largely on the farmers themselves. When practically every farmer insists on a high-grade product, the demand for poor-quality seeds will cease, and those unfit for sale as seed for sowing will disappear from the market.

French Beans.

It is realised that Queensland growers of French beans are desirous of selling seeds for sowing, only of a high quality; therefore, the condition of some of the seed beans forwarded to seed merchants can only be accounted for by the assumption that the requirements necessary to produce quality seeds are not fully understood. Acknowledging this, it is suggested that much greater care be taken in preparation of the bulk lots by more careful hand-picking, particular attention being paid to the removal of the germinated—sprouted and mouldy seeds. Their presence is indicative of excess moisture before or during harvest, or, may be, that the seed has been exposed to moisture during storage; this alone would account for the low germination figures recorded in certain samples. One sample revealed the presence of dead insects; even if the bulk to which this relates had been sieved and hand-picked it could not be made to comply. Insect-proof storage was the remedy.

Actually the forwarding of bean seed in such condition to Brisbane involves freight and testing expenses on a material that becomes a total loss.

Fees.

The concession scale of fees for testing seeds has now been operating for three years. During the year eleven seed vendors availed themselves of the service, those forwarding more than 60 samples during the twelve months being as follows:—

Name and Address.	No. of Samples Tested.
Addis Bros. Pty. Ltd., Brisbane	525
The Committee of Direction of Fruit Marketing, Brisbane	198
J. Jackson Co. (Produce and Seeds) Pty. Ltd., Brisbane	190
State Produce Agency, Brisbane	97
H. A. F. Boynton, Wondai	82

Trial Grounds.

With the co-operation and assistance of the Director of Agriculture, a number of lots of oats being offered for sale as seeds for sowing have been sown for purposes of identification. This aspect of the work of the branch is one that requires much greater attention in the future. Field trial grounds readily accessible all the year round would be of immense usefulness in solving some seed difficulties. Further, there is still a vast field of investigation in comparative trials of many varieties of the vegetables grown in this State.

Commerce (Trade Descriptions) Act of 1905.

Seeds for Sowing.

The following table sets out particulars relative to seeds from overseas, submitted by the Chief Quarantine Officer, Plants to this Branch for examination during the year 1938-39:—

Kind of Seed.	Imported from.	No. of Samples Examined.	Approximate Quantity of Seed Imported.
Barley	New Zealand	8	8 bags
Beans—			
Broad	New Zealand	2	1¼ bags
French	Norfolk Island, New Zealand, Holland, U.S.A.	43	39 bags
Lima	U.S.A., New Zealand	6	69 lb.
Mauritius	Papua, Fiji	7	360 bags
Beet	New Zealand, England, Holland, Germany, U.S.A.	70	2,029 lb.
Beet Sugar	England, Denmark	8	8 cwt.
Brussels Sprouts	Holland, England, New Zealand	4	4 lb.
Cabbage	Holland, England, New Zealand, U.S.A., Germany	89	267 lb.
Carrot	New Zealand, U.S.A., Holland, England, Germany	74	1,298 lb.
Cauliflower	Holland, New Zealand, Germany, England	28	62 lb.
Celery	New Zealand, Germany, Holland, England	14	21 lb.
Cucumber	U.S.A., New Zealand, Holland, Germany	62	770 lb.
Cowpeas	Papua	5	66 bags
Clover—			
Red	New Zealand	22	27 bags
White	New Zealand	2	1½ bags
Cress	New Zealand, Holland, Germany	4	5 lb.
Egg Plant	U.S.A.	2	2 lb.
Endive	Germany	1	½ lb.
Grasses—			
Agrostis sp.	New Zealand	5	5 bags
Cocksfoot	New Zealand	11	16 bags
Poa sp.	U.S.A.	3	150 lb.
Rye	New Zealand	55	121 bags
Kale	Holland	4	5 lb.
Kohl-rabi	New Zealand, Holland, Germany, England	15	18 lb.
Leek	England, New Zealand, Holland, U.S.A., Germany	9	6 lb.
Lettuce	U.S.A., New Zealand, England, Germany, Holland	90	253 lb.
Mangel	Holland, England, Denmark, Germany, New Zealand	109	86 cwt.
Marrow	New Zealand, Holland, England, Germany	49	563 lb.
Marjoram	U.S.A.	1	½ lb.

COMMERCE (TRADE DESCRIPTIONS) ACT OF 1905—*continued.*

Seeds for Sowing.

Kind of Seed.	Imported from.	No. of Samples Examined.	Approximate Quantity of Seed Imported.
Melons—			
Rock	U.S.A., New Zealand	33	80 lb.
Water	U.S.A., New Zealand, Germany	77	382 lb.
Mustard	U.S.A., Holland, New Zealand	3	100 lb.
Okra	U.S.A.	1	½ lb.
Onion	New Zealand, England, Germany, U.S.A.	17	26 lb.
Parsnip	New Zealand, U.S.A., Holland, England	15	142 lb.
Parsley	New Zealand, U.S.A., Holland, England, Germany	16	59 lb.
Peas, Garden	New Zealand, Germany	710	815 bags
Pumpkin	New Zealand	8	66 lb.
Radish	New Zealand, Holland, England, Germany, U.S.A.	47	300 lb.
Rape	England	39	39 cwt.
Rhubarb	Germany, England, Holland, New Zealand	10	12 lb.
Sage	U.S.A.	1	3 lb.
Shallot	Germany	2	½ lb.
Spinach	U.S.A., Germany, Holland	6	27 lb.
Swede	England, Denmark, Holland, New Zealand, Germany	43	3,335 lb.
Sweet Corn	U.S.A., New Zealand	11	47 lb.
Thyme	U.S.A.	1	1 lb.
Tomato	U.S.A., New Zealand, Holland, England, Germany	110	366 lb.
Turnip	Holland, England, Germany, New Zealand, Denmark, U.S.A.	43	376 lb.
	Total Number of Samples	1,995	

Parcels containing seeds received from Parcel Post for Examination, 290.

COMMERCE ACT—DETAINED.

The seeds mentioned in the above table were examined for purity (analytical) and germination, with the result that it was found necessary to stop the entry of the following seeds for the reasons set out:—

Lots.	Quantity.	Kind of Seed.	Reasons for Action.	Action Taken.	Country Received from.
1	14 lb.	Beet	Faulty germination	Destroyed	England
1	3 lb.	Celery	Faulty germination	Destroyed	New Zealand
1	1 lb.	Gourd	Faulty germination	Destroyed	Germany
1	½ lb.	Lettuce	Faulty germination	Destroyed	U.S.A.
3	5 lb.	Lettuce	Faulty germination	Destroyed	New Zealand
6	6 cwt.	Mangel	Faulty germination	Detained	England
3	17 lb.	Marrow	Faulty germination	Detained	New Zealand
2	31 lb.	Marrow	Faulty germination	Destroyed	New Zealand
1	3 lb.	Melon, Water	Faulty germination	Detained	New Zealand
1	4 oz.	Shallot	Faulty germination	Destroyed	Germany
1	4 lb.	Swede	Faulty germination	Detained	New Zealand

The germination percentages of a considerable quantity of seeds examined are below that usually found and have not a big enough margin above the standards prescribed; it would, therefore, be advisable for importers to ensure that their stocks do not fall below those standards. At the same time, they should, it is suggested, inform their suppliers of the necessity for always sending high-grade seeds, as the climatical conditions of storage are against the germination quality being maintained above the prescribed standard for any length of time.

The largest item detained consisted of 6 cwt. mangel seed from Denmark; this represented one consignment. The germination in ten days ranged from 25 per cent. to 35 per cent., which is considerably below the prescribed standard of 55 per cent. germinable clusters.

An appreciable proportion of the mangel and sugar beet seed imported only just reached the prescribed minimum. This will necessitate the inspection of all carry-over stocks before next planting season; a considerable proportion, undoubtedly, will not comply with germination requirements and will represent a big loss to the purchasers.

FERTILIZERS.

The following table sets out particulars relative to the operation of the Act for the year ending June, 1939:—

Licenses—	
Issued	228
Registrations—	
Effected—General	300
Effected—Special Mixtures	161
Samples received from—	
Inspectors	65
Dealers	51
Buyers	3
Government Departments	1
Analyses carried out by the Agricultural Chemist	117

The year's operations, as enumerated above, when compared with the table published last year, show an increase of eighteen licenses issued.

The number of fertilizers registered shows a decrease of ten general and two special mixtures.

Samples taken by inspectors have decreased by 102, due to the pressure of other work owing to moving into new quarters.

A survey of the analyses carried out on these samples indicates that the supply of fertilizer now being offered for sale in this State can be purchased with confidence.

The number of dealers' samples is increased by five over last year; while buyers have forwarded ten less samples.

NON-COMPLYING FERTILIZERS.

The following table sets out the action taken under supervision of an inspector in respect of fertilizers offered for sale and found not to comply with the requirements of the Act and Regulations:—

Lots.	Quantity.	Kind of Fertilizer.	Reason for Action.	Action Taken.
1	7 tons	Mixed Fertilizer	Damaged and unlabelled ..	Sale prohibited
2	15 tons	Guano	Unlabelled	Sale prohibited
1	48 tins	Manurial Insecticide	Unregistered	Seized and sealed

Of the samples received from buyers, two were found, on analysis, to be in accordance with the seller's guarantee, but the other sample was found to have an organic base in place of a chemical base; the actual money value, however, represented no loss to the purchaser. After investigation by this Branch, the offer made by the seller in full settlement of the complaint was accepted by the buyer.

GUANO.

The material shown as guano in the non-complying fertilizer table was found to contain percentages of nitrogen and phosphoric acid which placed it under the classification of rock phosphate, consequently it had to be sold as such.

It should be noted by all concerned that guano is the excrement and remains of bird and animal life and must contain not less than 5 per cent. of nitrogen and some phosphoric acid.

Any material of this nature of lower quality is classed as phospho-guano if the nitrogen content is below 5 per cent. and over 1 per cent. and the phosphoric acid content is above 5 per cent.; material of this nature lower still in nitrogen content is classed as rock phosphate.

GRADE FORMULAE.

The lowest grade mechanical mixture registered in Queensland this year contains total active constituents—nitrogen and phosphoric acid—amounting to 19 per cent.

The total active constituents of the lowest complete mechanical mixture containing nitrogen, phosphoric acid, and potash amounted to 20 per cent.

There are also being offered for sale materials which are claimed to serve a dual purpose—i.e., fertilizer and insecticide. These contain a minimum total of 7·1 per cent. nitrogen, phosphoric acid, and potash.

LIME.

At varying intervals the discovery is announced of shell deposits, usually in conjunction with an alluvial soil formation, which naturally produces prolific plant growth. The plant growth is, in the minds of the discoverers, sufficient to raise hopes of expecting an analysis to reveal a wonderful fertilizer combined with the virtues of lime.

Effective fertilizers, however, may only be measured in terms of nitrogen, phosphoric acid, potash, and lime.

The following table sets out the typical analyses of such a deposit:—

—	Shell "A" Per cent.	Shell "B" Per cent.	Over-burden. Per cent.
Moisture	0·90	4·20	4·80
Nitrogen (N). ..	0·06	0·11	0·18
Phosphoric Acid (P_2O_5) ..	0·13	0·40	0·37
Potash (K_2O)	0·08	0·12	0·13
Lime (CaO) (as carbonate)..	39·00	35·80	21·60
Organic Matter	8·90	12·60	12·20

Both the shell deposits have only lime values; deposit A could only be guaranteed at a minimum of 35 per cent. lime (CaO) as shell, and even then there would be an attendant risk due to the variable nature of the material. Deposit B could not be sold—it would not be safe to guarantee 35 per cent. Further, it would be necessary to install a crushing plant to reduce the shell to a size of less than ⅛ inch.

The sale of any lime for agricultural purposes containing less than 35 per cent. lime (CaO) is prohibited; therefore deposit A can only be classed as "low grade." If sold, constant supervision would be required to ensure maintenance of the minimum percentage guaranteed.

With respect to the overburden—this is a calcareous soil containing 21·6 per cent. of lime; it cannot be sold as fertilizer. If added to any fertilizing material, it would be considered as being of the nature of filler, and in accordance with Regulation 20, the maximum percentage by weight and common name of each and every such material or ingredient would have to be declared upon the label. For instance—

.... per cent. soil.

.... per cent. ground shells (low grade).

Obviously, the declaration of a percentage of soil on the label would adversely affect the sale of the material concerned.

The mixing of these materials with commercial fertilizer is not advisable; such action would only reduce their fertilizing value without adding any virtue to the resultant product, Another of these discoveries is coral sand. The last one reported on had only a trace of lime (CaO) present; it consisted chiefly of insoluble material (silica or quartz), amounting to 98·7 per cent.

And so the bubbles of illusion are burst and another "get rich quick" scheme is ended.

"Carbide" Processed Lime.

In the production of acetylene from carbide a waste product is obtained which when comparatively fresh is chiefly calcium hydrate.

Certain manufacturing concerns produce comparatively large quantities of this material yearly, and from time to time inquiries are received as to the possibilities of this material as processed lime for agricultural purposes.

It is advisable that this class of material be always aired for a considerable period before use. Even then, although the lime would probably be satisfactory for agricultural purposes, there are two main reasons why anyone contemplating undertaking production should move very cautiously.

They are, firstly, the material, although produced in quantity that may be considered large from one point of view, is not produced in anywhere near the quantity necessary to maintain a continuity of supply for agricultural application; and, secondly, the material is a paste which requires drying and grinding before the other requirements of the Fertilisers Act—bagging, labelling, &c.—are complied with; this naturally would be fairly expensive, particularly on a comparatively limited quantity.

It does not seem likely that this type of lime will find application to agriculture under present conditions.

VETERINARY MEDICINES.

The following table sets out particulars relative to the operation of relevant legislation for the year:—

Licenses—	
Issued	469
Registrations—	
Effected	736
Samples received from—	
Inspectors	13
Dealers	130
Buyers	2
Government Departments	—
Analyses carried out by—	
Agricultural Chemist	11
Animal Health Station	1
State Health Department	2
Board meetings	10

The year's operations as enumerated above, when compared wth the table published last year, show an increase of 90 licenses issued and an increase of 201 registrations effected.

Samples received from dealers have increased by two, buyers no change, and inspectors' samples by twelve.

Non-complying Veterinary Medicines.

The following table sets out the action taken under supervision of an inspector with respect to veterinary medicines which were offered for sale and found not to comply with the requirements of the Acts and Regulations on account of the reasons set out:—

Lots.	Packages..	Kind of Veterinary Medicine.	Reason for Action.	Action Taken.
1	*	Abortion Cure	Unregistered	Sale prohibited
2	5	Dog Medicines	Unregistered	Destroyed
2	*	Dog Medicines	Unregistered	Destroyed
4	*	Dog Medicines	Unregistered	Sale prohibited
1	5	Drenches	Damaged	Destroyed
2	4	Drenches	Unregistered	Destroyed
5	13	Drenches	Unregistered	Sale prohibited
2	*	Drenches	Unregistered	Sale prohibited
1	72	Embrocations	Unregistered	Destroyed
3	160	Embrocations	Unregistered	Sale prohibited
2	*	Embrocations	Unregistered	Destroyed
2	*	Embrocations	Unregistered	Sale prohibited
4	33	Ointments	Unregistered	Destroyed
8	51	Ointments	Unregistered	Sale prohibited
5	*	Ointments	Unregistered	Sale prohibited
1	11	Various	Unregistered	Destroyed
2	*	Various	Unregistered	Sale prohibited

* The number of packages contained in each lot was not ascertained.

The table above, being the results of inspections made, mostly relates to old stock, a portion of which the traders had found unsaleable because of the "fashion" having changed or to the condition of the labels or containers having deteriorated.

Rideal Walker Coefficient.

All liquid veterinary medicines which claim to be useful as germicides or disinfectants (the terms taken as being synonymous) are required to state on the label the Rideal Walker coefficient, an evaluation of their efficiency in killing bacteria. Antiseptics need not be thus labelled, as they do not necessarily kill germs—merely prevent the growth of putrefactive bacteria.

The Rideal Walker coefficient is a statement of the rate of dilution in hundreds at which the germicide in question will kill typhoid germs in the same time as 100 per cent. carbolic acid diluted 1 in 100. If a dilution of 1 in 300 is required for a certain germicide to effect a kill, then the Rideal Walker coefficient is 3.

During the year several determinations of the Rideal Walker coefficient were carried out by the Animal Health Station and Health Department for dealers in veterinary medicines; the results obtained, however, were surprisingly low—in one case being as low as 0·2.

Compared with some of the germicides which have a Rideal Walker coefficient as high as 18, these products do not show to advantage; it would be better if, with preparations where the Rideal Walker coefficient is exceptionally low, the words germicide or disinfectant were not used and the coefficient not shown, their use being confined to application as an antiseptic.

When comparing germicides on a price basis, the Rideal Walker coefficient should be considered before ruling out the higher priced material.

A list of germicides and disinfectants is in course of preparation, which will set out the Rideal Walker coefficient of the various preparations, and copies will be available for distribution.

ACT AMENDMENT.

Legislation relating to the control of the sale of veterinary medicines was revised by an amendment to the Act which had first come into operation on 8th February, 1934; it had, therefore, been administered for over five years, during which period experience had been gained and certain amendments found necessary. Briefly, as included in the amending Act of last Session of Parliament, they are as follows:—

Additional definitions and amendments to the present definitions were required.

The Board's powers are widened to embrace the quality of the drugs and ingredients contained in the veterinary medicine.

The appointment of a registrar of veterinary medicines is provided—which simplifies the registration of veterinary medicines and makes the registration more definite legally.

When the Board refuses to recommend the registration of any veterinary medicines the primary dealer will have the right of appeal to the Minister, whose decision is final. In order to limit the number of appeals to legitimate cases, it is provided that a cash deposit not exceeding £100 shall be paid with the application of appeal, and that all expenses for such shall be borne by the appellant.

Provision is made for registration to be effected every three years in place of annually, as at present, the registration fees will be payable yearly, as at present, and a penalty of 5s. provided per five veterinary medicines per month for late lodgment of registration papers.

Provision is also made for the publication of a list of registered veterinary medicines in the *Queensland Agricultural Journal*.

It is now an offence to use labels other than those approved by the Board and registered under the Act.

Section (11) of the original Act is amended to include power of seizure by inspectors of unregistered veterinary medicines or veterinary medicines that do not comply with the requirements of the Act. A provision is made, however, that where a dealer can and does comply with the Act's requirements within ninety days of seizure, he may apply for release of the veterinary medicines seized.

Provision is also made in this section for publication of the result of analysis and comments thereon with respect to any veterinary medicine.

So far as possible these amendments are in line with "*The Fertilizers Act of* 1935" and "*The Seeds Act of* 1937."

PUBLICATION OF LIST OF REGISTERED VETERINARY MEDICINES.

Registration is now necessary every three years, instead of every year, as required before the Act was amended. Consequently, a list of registrations published now lasts for quite a considerable period, and justifies the work involved in preparation, whereas previously a list prepared would be out of date almost as soon as it would be published.

As mentioned elsewhere, a list was published in the *Queensland Agricultural Journal* for April, copies of which are available for those interested.

PEST DESTROYERS.

The following table sets out particulars relative to the operations for the year 1938-1939.

Registrations—	
Effected—	
General	344
Special mixtures	24
Samples received from—	
Inspectors	22
Dealers	480
Buyers	2
Government Departments	1
Analyses carried out by the Agricultural Chemist	92

The year's operations as enumerated above, when compared with the table published last year, show a decrease of seventy-six registrations effected.

Of the samples received from buyers (complaints), one was found to comply with the prescribed standards, the other, however, (a lime-sulphur concentrate), was of very poor quality, and after action was taken by this Department compensation was paid by the supplier.

NON-COMPLYING PEST DESTROYERS.

The following table sets out the action taken under supervision of an inspector with respect to pest destroyers offered for sale and found not to comply with legislative requirements:—

Lots.	Packages.	Kind of Pest Destroyer.	Reason for Action.	Action Taken.
1	55	Sheep Dip	Unregistered	Sale prohibited
1	6	Sheep Dip	Unregistered	Destroyed
2	23	Manurial Insecticide	Unregistered	Destroyed
2	50	Manurial Insecticide	Unregistered	Sale prohibited

STANDARD SPECIFICATIONS AND METHODS FOR SAMPLING AND ANALYSIS OF PEST DESTROYERS.

During the current year, draft standards relating to the above were submitted for comment to this Department by the Australian Chemical Institute—the final standards to be issued by the Standards Association of Australia.

A considerable amount of information was forwarded by this Branch both prior to the formulating of the matter, and in the form of comment on the draft when received.

Although these standards will not alter the position in Queensland to any great extent—as standards for pest destroyers have been in force since 1923—a uniform basis will now be provided for all States to come into line.

Some of the Queensland standards will, of course, be adjusted where necessary to conform to the principle of uniformity.

The methods of sampling drawn up were commented on at some length and suggested additions made; this Branch has been taking samples of pest destroyers and similar materials, including fertilizers, for a number of years, and satisfactory methods of sampling, both powder and liquid materials, under the various commercial conditions, have been evolved.

ANALYSIS OF SAMPLES—CATTLE DIPS AND SHEEP DIPS.

Particular attention has been paid during the current year to the analyses of both cattle and sheep dips. With cattle dips, at present the highly concentrated (1 to 300 and 1 to 320) materials are required to contain, as well as the prescribed amount of arsenic trioxide and caustic soda or sodium carbonate, an amount on dilution of—

> Not less than 0·01 per cent. of soap or its equivalent in tallow or saponifiable oils; and
>
> Not less than 0·25 per cent. of Stockholm tar or phenolic compounds.

Unfortunately, there is apparently some difficulty in obtaining in certain concentrates all of these requirements, cattle dips which contain the full arsenic and soda requirements being deficient in soap and/or phenolic compounds, and *vice versa*.

It would appear that under the standard set 1 in 300 is the maximum concentrate that can be safely prepared, 1 in 320 being beyond the practical limit.

In other parts of the world—South Africa, for instance—cattle dip concentrates up to 1 in 360 are marketed, but no soap, tar, or tar acids are required to be present in such concentrates.

Sheep dips are classified under the Pest Destroyer Regulations as those belonging to group (*a*), homogeneous, readily soluble in or miscible with water, and containing 3 per cent. or more of oil emulsified or saponified, and those belonging to group (*b*), those not complying with the above. Group (*b*) includes dips containing insoluble arsenic (arsenic sulphide)—chiefly powder and paste dips.

Notices acknowledging registration of group (*b*) sheep dips bear a statement that the material concerned is "registered as a sheep dipping, spraying, jetting, or swabbing concentrate or compound (arsenical), group (*b*)."

Group (*b*) sheep dips are limited by the Poisons Regulations of 1924 to use during the four months immediately after shearing.

SPRAYING OILS.

Certain spraying oil concentrates for which application for registration was made during the year did not set out the active constituents in the prescribed form.

The object of declaring the active constituents is to enable the purchaser to ascertain, firstly, the active components; and, secondly, to compare any particular material with others containing the same or similar active components. Unless this objective is attainable from the information set out, the purpose of the Act is defeated.

One instance in question may be given:—One manufacturer desired to place on the market a tar distillate spray; the active constituents, however, were shown simply as ". . . . per cent. emulsifiable oils." Now the active constituents in a tar distillate spray are tar oils, tar acids (phenolic compounds), and also, usually, mineral oil. The expression emulsifiable oils means actually any oils at all, and there is no evidence from the declaration on such a label that the material is a tar distillate spray at all; also, comparison with other tar distillate sprays obviously cannot be made.

This material was, of course, not registered under the label submitted.

LIME-SULPHUR EXPERIMENTS.

The experiments relating to the keeping qualities of lime-sulphur concentrate—mentioned in the annual reports for the last two years—have now advanced to a stage where fairly conclusive results have been obtained. In fact, one experiment has been finalised, it being considered that no good purpose could be served by further prolonging the period of storage—amounting to over two years—which should be far beyond the normal period of storage of this material.

These experiments were designed to investigate the following points:—

1. Would good quality lime-sulphur concentrate retain its quality—based on polysulphide sulphur content—under ideal conditions of storage.
2. Does heat in the form of direct rays from the sun on to the container cause a lowering of quality.
3. Does storage in a container containing a large volume of air compared with the volume of lime-sulphur cause a lowering of quality.
4. Does a combination of the conditions outlined in (2) and (3) cause a lowering of quailty, and if so, does this lowering occur to a greater extent than in (2) and (3); provided, of course, there is a lowering of quality in (2) and (3).

The following table gives the results of the experiment finalised:—

Drum.	Storage Conditions.	Polysulphide Sulphur wt. to wt.			
		4 months.	6 months.	11 months.	25 months.
		Per cent.	Per cent.	Per cent.	Per cent.
A. Full	In open exposed to sun	19·4	19·4	19·4	20·0
B. Full	In a shed—i.e., in the shade..	20·2	20·0	19·6	20·3
C. One-third Full ..	In open exposed to sun	20·5	20·3	20·0	20·0
D. One-third Full ..	In a shed—i.e., in the shade..	21·1	21·0	20·5	20·4

All drums are kept airtight.

It may be pointed out that the first analysis is shown as being done after four months; this was the age of the lime-sulphur at starting. Actually storage under the above conditions, however, did not cover this period of four months—the containers all being in a shed.

The progressive lengths of time between sampling is due to two reasons—the apparent stability under all conditions, and the difficulties attendant on arranging for sampling and analysis of the samples. Samples must be taken early on the day they are to be analysed, so that a minimum of loss can be attributed to deterioration due to length of storage after exposure to the open air.

Samples were taken by the same officer in all cases, and the method developed at this Department was used—viz., a type of siphon composed of a glass bottle, glass tubes, rubber stopper, and rubber tubes. This is started by applying suction to the apparatus with the lips and then lowering, where possible, when flow continues automatically.

All samples, of course, were representative of one container only, and all containers were shaken or rolled before sampling. As the calcium polysulphide is a soluble compound, no great difficulty in obtaining a representative sample is apparent. It will be observed, however, on examination of figures given, that there is an apparent increase in polysulphide content in certain cases. Although no definite statement can be made, it is thought very unlikely that calcium polysulphide would be synthesised from calcium monosulphide and/or other compounds present. Because of the unstable nature of lime sulphur under certain conditions, the irregularities in these results are such as might be expected. Taking the first and final figures and making allowances along these lines, it seems reasonable to assume the following:—*Lime-sulphur concentrate of good quality* (such as would at least comply with the standard under the Queensland Pest Destroyers Act) *shows no loss of polysulphide sulphur under storage conditions, or over a period of time likely to obtain in normal commercial storage.*

A further experiment now in progress is along the same lines, but does not cover quite the same variety of conditions, consisting merely of two containers, one full and the other one-third full, stored in the shade. To date, the results set out in the following table have been obtained:—

Drum.	Storage Conditions.	Polysulphide Sulphur wt. to wt.			
		—	1 month.	6 months.	12 months.
		Per cent.	Per cent.	Per cent.	Per cent.
E. Full	In a shed—i.e., in the shade..	19·0	19·9	20·6	18·8
F. One-third Full ..	In a shed—i.e., in the shade..	19·0	19·8	20·6	18·7

Here, again, a rise in polysulphide content is shown, but the same explanation is thought to apply as previously.

To the present, however, this experiment tends to confirm (along narrow lines) the stability of good-quality lime-sulphur concentrate under normal commercial conditions. Except for the short periods when sampling is being carried out, the drums are kept sealed from the atmosphere.

SHEEP PREPARATIONS.

Since the Pest Destroyers Act came into force "pest destroying sheep preparations" have been registered. Included in this classification are all preparations for the control of external parasites of sheep—lice, ticks, blowflies, and other pests.

In 1933, the Veterinary Medicines Act came into force, and quite a number of these sheep preparations were then found to make certain claims which would class them as veterinary medicines as well as pest destroyers—for instance, fly-blow dressings as well as repellants or insecticides for the killing of the maggot.

To simplify the handling of these materials, however, and to obviate confusion, all such preparations are now registered under the Pest Destroyers Act, the claims being subject to review under the Veterinary Medicines Act.

STOCK FOODS.

The following table sets out particulars relative to the operations for the year: —

Registrations—	
Effected	282
Samples received from—	
Inspectors	7
Dealers	328
Buyers	1
Chief Quarantine Officer (Plants)	38
Government Departments	3
Analyses carried out by the Agricultural Chemist	63

NON-COMPLYING STOCK FOODS.

The following table sets out the action taken under supervision of an inspector with respect to stock foods offered for sale and found not to comply with the requirements of the Acts and Regulations.

Lots.	Packages.	Kind of Stock Food.	Reason for Action.	Action Taken.
3	25	Calf Meal	Unregistered	Sale prohibited

BUYERS' SAMPLES.

Of the buyers' samples received, two were of chaff which was alleged to have caused the death of animals; both of these samples on chemical and microscopical examination were found to be free of any deleterious substances.

The third sample proved to be cleanings and sweepings from a seed-cleaning plant which were sold at the rate of 4s. 6d. per chaff bag, the analysis results being as follows:—

	Per cent.
Moisture	10.5
Crude Protein	12.2
Crude Fat	3.6
Crude Fibre	11.2
Ash	9.1
Insoluble in HCl	4.0

This analysis does not disclose anything particularly irregular—the protein and fat contents are fair, and the insoluble in hydrochloric acid would indicate only a comparatively small amount of extraneous matter.

A microscopic examination shows the presence of Setaria (panicum) hulls and caryopses, oat hulls, seed of Polygonum, Hibiscus trionum, and Amaranthus and a considerable quantity of fine material.

Material of this nature is classed as of "low food value" and would not be required by the Acts to be labelled as to its quality.

The absence of labels on any stock food, other than straight grains, hay, and chaff, is at all times an indication to the buyer to be cautious, and if he must purchase such material he should make himself well aware as to its composition.

IRON SULPHATE.

Material commonly sold under the name of iron sulphate is chemically known as ferrous sulphate ($FeSO_4.7H_2O$).

From a stock feeding point of view, it is most important that iron sulphate used shall be ferrous sulphate, as the ferrous salts are of admitted value in effecting haemoglobin formation in the blood stream, while ferric salts—iron salts which may be formed by oxidisation of ferrous salts—are considered practically valueless.

To ascertain whether all the iron sulphates commonly used in the manufacture of mineral feeds or stock licks are ferrous sulphate, samples were obtained and submitted to the Agricultural Chemist with the results as set out as follows:—Two samples of each brand were obtained. From this it will be seen that all samples were practically wholly ferrous sulphate and were of good quality.

These iron sulphates are not usually purchased in their "straight" form by users, but are bought made up in feeds or licks. Consequently, iron sulphates themselves are not required to be registered under the Stock Foods Acts.

SULPHATE OF IRON.

Name and Brand.	Ferrous Iron (Fe.)	Ferric Iron (Fe.)	Total Iron (Fe.)	Name and Address of Dealer.
	Per cent.	Per cent.	Per cent.	
Sulphate of Iron .. .. G.	..	..	19·7	A.C.F. and Shirleys Fertilizers Ltd., Brisbane
F.	20·5	1·3	21·8	
F.	20·3	1·2	21·5	
Sulphate of Iron .. .. G.	..	..	19·6	Fertiliser Distributers Pty. Ltd., Brisbane
F.	20·7	0·5	21·2	
F.	20·0	1·6	21·6	
Sulphate of Iron .. .. G.	..	..	20·0	Neptune Oil Co., Ltd., Brisbane
F.	24·2	1·4	25·6	
F.	23·2	1·2	24·4	
G.	..	..	19·1*	Taylors Elliotts and Australian Drug Pty., Ltd., Brisbane
F.	20·2	1·2	21·4	
F.	20·4	0·9	21·3	

* Calculated from Iron Sulphate per cent. G. Guaranteed on label. F. Found on analysis by Agricultural Chemist.

BRAN AND POLLARD—UNIFORM STANDARDS.

Draft New Zealand specifications relating to these stocks foods were received for comment from the Standards Association of Australia.

As standards for bran and pollard have been under discussion for some time and have been tabled at the last meeting of the Australian Agricultural Council, the matter had been thoroughly investigated here at a comparatively recent date, and an opinion was readily given.

The following schedule summarises Queensland proposed standards:—

A limitation of crude fibre to 5·5 per cent. (at 15 per cent. moisture) with a 1 per cent. tolerance was proposed in the draft received and is acceptable, although it seems unnecessary on top of the standards proposed and may even lead to adulteration by allowing material to be "built up" to the maximum fibre allowed.

AMENDMENT TO STOCK FOODS REGULATIONS.

In the course of the year, a committee was formed to formulate methods of safeguarding stock from the possible danger arising from feeding foods produced from the bodies of animals affected with various infectious diseases.

Kind of Stock Food.	Substance (Foreign Ingredients).	Proportion or Amount Allowed.
Bran shall consist of the outer skin or coating of the wheat grain or berry, obtained as a by-product of the commercial milling process for the manufacture of wheat flour; the impurities shall have been removed by cleaning.	(*a*) Any substance of a non-deleterious character, other than the by-products of wheat.	1 per cent. by weight
	(*b*) Whole and/or broken wheat grain ..	None
Pollard shall consist of that portion of the wheat germ or berry other than bran or flour, obtained as a by-product of the commercial milling process for the manufacture of wheat flour; the impurities shall have been removed by cleaning.	(*a*) Any substance of a non-deleterious character, other than the by-products of wheat.	1 per cent. by weight
	(*b*) Any wheat by-product that will not pass through a B.S.S. 14 mesh sieve. (Aperture ·0474 inch = 1·204 mm.).	1 per cent by weight.

The committee consisted of Professor H. R. Seddon, Principal, School of Veterinary Science; Dr. M. White, Animal Nutrition Officer attached to this Department; and Mr. F. B. Coleman the Officer in charge of this Branch.

Action resolved itself into amending the regulations under the Stock Foods Acts, to ensure that the definitions of the various animal products and the specifications of sterilisation laid down were a sufficient protection. At the same time, a fresh classification of these products based on analysis and/or fineness was introduced.

The dividing line between meat meal and meat and bone meal was drawn at 5 per cent. phosphoric acid.

Bone products were classified under the headings—Bone flour, bone meal, kibbled bone, green bone, and bone cree, under progessively increasing particle size.

The three last-named were allowed a slightly less drastic method of sterilisation to prevent crumbling or dusting, and so make the classification possible of attainment.

Opportunity was taken at the same time to introduce a new regulation providing that no machinery may be used for compounding or mixing sterilised stock foods, if such machinery has been used for unsterilised material. Also no machinery which has been used for any material deleterious to stock may be used for compounding or mixing any stock food. This in effect will prevent fertilizer-mixing machinery—or any machinery which has been used for mixing poisonous or harmful materials—from being used for mixing stock foods.

The amending regulations were issued on 26th November, 1938.

STOCK FOODS IMPORTED FROM OVERSEAS.

The following table sets out the samples submitted for examination by the Chief Quarantine Officer, Plants, representing seeds imported from overseas for feeding purposes only during the year ending June, 1939:—

Kind.	From.	No. of Samples.	Quantity.
			Bags.
Canary	England	3	3
Hemp	Japan, England	18	439
Linseed	New Zealand, India, England	10	208
Maw	Belgium, England, Holland	4	23
Millet—			
Mixed	Japan	7	32
Red	Japan	2	210
Mixed Bird Seed ..	England	5	11
Rape	Japan, England, New Zealand	56	224
Turnip	New Zealand	1	14
	Total	106	

The above consignments were examined, and with the exception of the undermentioned were found to comply with the requirements of the Stock Foods Acts:—

Lots.	Quantity.	Kind of Seed.	Reason for Action.	Action Taken.
	Bags.			
2	145	Linseed	Prohibited weed seeds ..	Detained

These consignments of linseed contained the prohibited seeds of *Asphodelus fistulosus* (Onion Weed), were detained, and subsequently removed under control to the South for cleaning purposes.

F. B. COLEMAN, Officer in Charge.

REPORT OF THE AGRICULTURAL CHEMIST.

The samples received by the Agricultural Chemist for analysis during the year ending June, 1939, are tabulated below:—

—	1936-37.	1937-38.	1938-39.
Butters	489	679	674
Buttermilks	10	7	13
Cheese	343	357	718
Digestibility trials (Stock Foods)	..	168	151
Dipping fluids	414	420	132
Fertilizers	188	205	73
Fruits, fresh	38	46	36
Fruits, canned, jams and preserves	18	19	33
Grasses, plants, seeds, &c...	85	87	165
Grasses, plants for hydrocyanic acid	35	13	12
Limestones, lime, &c. ..	49	42	34
Milks and other milk products	8	15	47
Pest destroyers	165	376	149
Plants, for Poison Plants Committee	..	157	48
Salts and stock licks ..	8	14	12
Sawfly investigation specimens	17	4	..
Soils and subsoils	191	239	138
Soil moisture determinations	2,304	2,496	1,824
Soils licked by stock ..	3	..	1
Soils for nitrate, pH, carbon, partial analysis. and mechanical analysis ..	1,760	2,461	3,001
Spray residues on plants ..	..	..	1,115
Stock foods	123	95	65
Waters	420	135	125
Wheats	19	56	95
Viscera and toxicological specimens	269	241	282
Veterinary medicines ..	10	6	12
Miscellaneous	60	79	46
Totals	7,006	8,417	9,301

GLASSWARE TESTED, &C.

—	Received.	Approved.	Condemned.	Broken.	Per cent. Condemned.
Burettes	28	28	..	..	..
Cream Bottles ..	5,457	5,423	17	17	0·3
Milk Bottles ..	647	644	..	3	..
Pipettes	999	891	86	22	8·6
Thermometers ..	1,384	1,324	50	10	3·6
Totals ..	8,515	8,310	153	52	1·8

For the testing of cattle-dipping fluids, 278½ pints of standard iodine solution were prepared, and 506 pints of N/10 alkali for testing milk acidity.

The total number of graduated dairy glassware and thermometers was nearly double that tested last year, and the total percentage condemned was only one-fifth of the amount condemned last year.

The accomplishment of the large amount of work tabulated above has been made possible by the efficient work of the whole of the staff.

VISCERA AND TOXICOLOGICAL SPECIMENS.

Two hundred and thirty-nine samples of viscera and toxicological specimens were received and analysed during the year 1938-39, of which 197 were samples of viscera and ingesta.

Of the 197, 33 samples gave definite amounts of arsenic—namely, 16·7 per cent. of the samples received and 21 samples gave traces of arsenic of doubtful significance. One contained strychnine, one contained nitrates, and two contained copper.

Forty-two samples of miscellaneous toxicological samples, such as baits, plants, earths, waters, &c., were received, and of these samples 8 gave definite amounts of arsenic namely, 19 per cent., 3 gave traces of arsenic of doubtful significance, 3 contained hydrocyanic acid, and 1 contained oxalic acid.

In addition, Professor Seddon submitted 43 samples in connection with an investigation of the toxicity and distribution of arsenic under various conditions of administration.

CUSTOMS SAMPLES.

From the Commonwealth Dairy Produce Inspection Branch and the Meat and Fruit Exporting Branch 1,408 samples were received, this number being 359 in excess of such samples received last year. There were 609 samples of butter analysed for export and 63 butters competing for the Orient prize, these last being collected by the courtesy of the Federal officers. There were 710 export cheese samples, whereas last year the number was 314, and 6 samples of imported cheese. Other samples for export comprised buttermilks 10, milks 41, and 32 meats and, meat products, preserved fruits jams, chutneys, &c.

SOILS.

The chemical analyses of soil samples submitted are given in Table I., and the mechanical analyses and physical properties in Table II.

A large number of soils forwarded by farmers did not receive full chemical analysis, but were examined for acidity and physical condition, in some cases for available phosphoric acid; and in connection with these samples, when possible, extension officers of the Department have visited the properties and reported upon conditions existing, and with these reports, in conjunction with the soil examination mentioned, it has been possible to advise and give the information desired.

A very considerable amount of analytical soil work in connection with investigations of officers associated with the Forestry Department regarding such matters as chlorosis, forest litters, &c.,

was done—the total number of soil samples examined being 157. A number of such samples came from the Kalpowar Nursery, and at the request of the Forestry Sub-Department a soil chemist from this Branch visited the nursery, and had samples taken of soils and water used for irrigation from the old and proposed new nursery site, and upon completion of the analytical work forwarded a report upon his investigation.

In connection with investigations concerning the nitrification occurring in cotton soils throughout the season and under different cultural treatment, the Director of Cotton Culture had submitted during the year 1,347 soil samples for initial nitrate determination and 48 soil samples for incubation and determination of potential nitrate, and had also forwarded 42 soil profile samples of different soil types for analysis. In connection with an investigation initiated in 1929 for the purpose of determining the percolation and retention of rain water on soil under different treatment during the year, moisture determinations were made on 1,824 soil samples forwarded from the Biloela Cotton Research Station.

To determine the carbon-nitrogen ratio and pH of tobacco seedbed soils in various districts during different periods of the year, 619 soil samples were analysed, and in some cases the ammoniacal nitrogen was determined.

In regard to soil investigation in pineapple-producing areas, the analytical work in conjunction with the soil survey of the Nambour, Woombye, Palmwoods pineapple districts has been completed. This included 51 samples for hydrochloric acid and mechanical analysis, 112 samples for carbon, nitrogen, pH, moisture equivalent, and buffer capacities, and 77 samples in which the replaceable lime, magnesia, and potash were determined. A considerable amount of analytical work has been done in connection with the pineapple fertility trial plots at Glasshouse Mountains, since 40 samples were analysed in duplicate for nitrate, ammonia, total nitrogen, replaceable potash, available P_2O_5 before the plots were laid down. Since then these determinations have been carried on for the 15 check plots at intervals of approximately six weeks. Regular soil-moisture samples from pineapple and papaw experimental plots have been taken and 980 samples have been done.

A brief soil survey of the Tara district was made during an investigation into the question of growing fodder crops as winter feed for sheep. Five distinct soil types were defined, and representative samples from each type were analysed for nitrogen, replaceable potash, available phosphates, and pH. It was found that under virgin conditions these soils were well supplied with potash, and contained fair amounts of nitrogen. With the exception of the typical brigalow soils, however, the available phosphoric acid content was low. There was also a marked difference in the moisture conserving properties of the subsoils, and again the brigalow soils were markedly superior in this respect. This soil type is quite capable of producing good fodder crops, as are the more open phases of the belah, the box flat, and the silver-lead ironbark country. The soils which carry a combined brigalow-belah-box association, however, are generally unsuitable for cultivation.

On account of investigation concerning the effect of different methods of application of fertilizer to pastures, 100 soil samples for determination of available phosphoric acid and 4 samples for full analysis were submitted by research officers of the Department.

A total of 3,000 soil samples was received for examination.

DIGESTIBILITY OF STOCK FOODS.

During the year three members of the staff under the guidance of Dr. White have been solely occupied in continuing the experiments for the determination of the digestibility of the various food groups in Queensland pasture plants and concentrates. The number of analyses involved was 151; the object of this work is to prepare a list of these plants and concentrates with their digestible nutrients. The results of this work are now being applied in the programme of drought feeding for sheep, now in progress.

An experiment started five months ago with the feeding of meat meal is continuing.

Some work has also been done in connection with the feeding of salt to sheep, the object being to find the total salt intake of which the sheep is capable.

GRASSES, SHRUBS, &c.

The number of grasses and plants forwarded for analysis in connection with their value for stock feed was nearly double that received last year; these analyses are detailed in Table III.

The samples of galvanised burr and nut grass were forwarded by officers attached to the Council of Science and Industry.

As in previous years, a considerable number of Rhodes grass samples were received from the Cotton Branch in connection with an investigation concerning the effect of different cultural operations upon the Rhodes grass in conjunction with rotation with cotton, and as this investigation will require some years for completion, the analyses are not tabulated.

POISONOUS PLANTS.

In connection with poisonous plants, the Minister has called together a Poison Plant Committee comprised of officers in charge of the various scientific branches of the Department, and the Australian Wool Board has made available a sum of money to the Department of Agriculture and Stock for the purpose of contributing to some of the expenses entailed in conducting the investigation of suspected poison plants.

The plants from this committee this year entailed 48 quantitative analyses of hydrocyanic acid. Samples of certain plants are taken at different periods of the year to ascertain the seasonal variation of their hydrocyanic content. The examination of two more plants—viz., *Heterodendron oleaefolium* and *Ximena Americana*—have been completed, and the analyses and report upon these plants will be published in the *Queensland Agricultural Journal*. The foregoing deals only with some of the chemical aspects of the Committee's activities, as beside chemical analyses a number of feeding trials have been conducted by other officers of the Department.

A very large number of analyses were made on behalf of officers of Division of Plant Industry, who submitted 1,115 samples of citrus and tomato leaves for determination of residual spray ingredients on samples taken after definite periods of time had elapsed from the original spraying of plants.

Regarding the mango industry in the northern districts, the Fruit Branch submitted samples of some of the different varieties growing there, such as the Common Mango, Kensington, Bullock Heart, and three later varieties. These were forwarded at weekly intervals of growth from 12th December, 1938, to 23rd January, 1939, for the purpose of collecting information from the analyses with the view of ultimately laying down regulations for maturity standards.

VETERINARY MEDICINES.

As Chairman of the Veterinary Medicines Board appointed under *"The Veterinary Medicines Act*, 1933," the following comparison of the year's work is reported:—

Year.	1937.	1938.	1939.
Registrations effected ..	570	531	736
Board meetings	8	10	10

E. H. GURNEY,
Agricultural Chemist.

Table I.—ANALYSES OF QUEENSLAND SOILS.

Laboratory No.	Locality.	Description of Soils.	TOTAL ELEMENTS IN THE SOIL, CALCULATED ON SOIL DRIED AT 100° C.									Available Plant Food. Soluble in 1 per cent. Citric Acid.				Total Elements, Lb. per Acre, 12" Deep.				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. per Acre, 12" Deep.			Soil Acidity.	Remarks.
							Soluble in Hydrochloric Acid. Sp. Gr. 1·15.																PH.	
			Humus.	Combined Water and other Organic Matter.	Chlorine.	Nitrogen.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid.	Lime.	Potash.	Phosphoric Acid.	Lime.	Potash.	Water Suspension 1:2	
			%	%	%	%	%	%	%	%	%	%	%	%	%									
	MORETON—																							
4658	Tambourine ..	ch. l. ..	4·74	23·34	·006	·441	·420	·340	·090	·080	32·97	·0070	·2806	·0399	·0327	[illegible]	[illegible]	[illegible]	2,480	217	8,698	735	6·55	
4659	Ditto	ch. l. ..	4·56	23·05	·004	·450	·510	·420	·060	·070	30·10	·0081	·2848	·0228	·0233	[illegible]	[illegible]	[illegible]	[illegible]	253	8,903	728	6·58	
4660	Ditto	ch. l. ..	4·48	23·34	·006	·437	·460	·350	·110	·100	30·26	·0076	·2697	·0613	·0306	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	948	6·72	
4667	Aspley	dk. gr. br. cl. l.	2·23	7·21	·004	·136	·140	·570	·050	·090	84·43	.	..	.	.	4,771	[illegible]	19,995	[illegible]				6·22	
4668	Ditto	dk. gr. br. cl.	1·54	7·41	·007	·120	·160	·250	·070	·070	83·07	..	.	.		4,014	[illegible]	8,362	[illegible]			.	6·17	
4677	Brisbane Valley ..	dk. ch. l. ..	8·90	15·00	·010	·889	·321	1·680	·381	·195	54·50	·0630	·6190	·0700	·0150	22,241	[illegible]	[illegible]	4,878	[illegible]	15,486	375	7·19	
4678	Ditto	dk. rd. br. l.	7·20	16·80	·010	·742	·063	·700	·170	·038	54·20	·0040	·3610	·0520	·0270	[illegible]	1,525	[illegible]	920	97	[illegible]	[illegible]	6·12	
4679	Ditto	ch. l. ..	6·00	14·00	·010	·796	·653	1·690	·120	·246	53·90	·0750	·5670	·0070	·0240	22,728	[illegible]	48,255	[illegible]	2,141	16,464	685	7·41	
4680	Ditto	gr. bl. l. ..	2·20	10·40	·010	·271	·609	·750	·415	·237	71·54	·0450	·2040	·0220	·0110	7,222	[illegible]	19,987	6,316	1,199	5,436	293	6·49	
4686	Yarraman .. .	dk. rd. cl. l.	2·36	20·21	·005	·312	·260	·250	·050	·070	66·66	·0010	·2184	·0064	·0192	10,266	8,555	8,226	2,365	32	7,186	628	6·79	
4687	Ditto	dk. br. cl. l.	3·09	16·57	·005	·326	·280	·290	·020	·090	48·26	·0018	·1609	·0127	·0185	10,283	8,852	9,148	2,839	57	5,075	583	7·23	
4684	Benarkin	br. cl. l. ..	3·50	11·95	·007	·238	·080	·120	·020	·050	65·05	·0033	·0654	·0056	·0122	7,831	2,632	3,948	1,645	108	2.152	401	5·73	
4685	Ditto	gr. br. s. l.	3·10	10·41	·004	·198	·060	·120	·020	·050	75·82	·0057	·0976	·0109	·0134	6,461	1,958	3,916	1,632	186	3,185	437	5·86	
4692	Byron	rd. br. cl. ..	1·84	15·00	·002	·172	·243	·050	·165	·109	43·30	·0020	·0340	·0490	·0120	5,238	7,218	1,492	3,320	61	1,035	365	5·25	
4693	Ditto	md. br. cl.	1·28	8·70	·002	·126	·277	·043	·055	·111	62·40	·0020	·0140	·0230	·0140	4,214	9,031	1,405	3,713	67	468	468	5·43	
4694	Ditto	md. br. cl.	1·50	10·30	·003	·189	·314	·036	·100	·090	63·90	·0020	·0210	·0310	·0110	6,065	9,883	1,123	2,888	64	674	353	5·25	
4695	Ditto	gr. br. cl. ..	1·64	9.00	·002	·155	·261	·101	·025	·069	67·00	·0020	·0280	·0220	·0110	5,527	8,565	3,406	2,327	68	944	371	5·11	
4696	Yarraman	dk. rd. l. ..	4·45	18·00	·006	·386	·230	·370	·030	·180	33·76	·0051	·2452	·0218	·0219	11,651	6,942	11,168	5,433	154	7,401	661	6·99	
4701	Baker's Creek ..	gr. bl. l. ..	2·46	10.10	·001	·312	·418	1·529	·235	·262	69·00	·0880	·3160	·1260	·0270	8,654	11,039	40,386	7,267	2,440	8,765	749	6·19	
4719	Kilcoy	br. l. ..	4.40	8·10	·007	·250	·138	1·455	·415	·708	71·70	·0250	·6630	·1260	·0350	7,206	3,978	41,941	20,408	721	19,111	1,009	8·44	
4720	Ditto	br. l. ..	3·30	8·60	·007	·415	·129	·662	·540	·574	71·60	·0070	·2560	·1100	·0150	11,511	3,578	18,362	15,921	194	7,101	416	7·07	
4721	Ditto	br. l. ..	4·20	8·20	·007	·332	·161	2·858	·500	·486	69·10	·0080	·5360	·0990	·0210	9,209	4,466	79,237	13,480	222	14,138	582	8·84	
4722	Ditto	br. l. ..	3·40	8·30	·007	·434	·158	2·827	·385	·615	70·80	·0120	·5320	·1030	·0300	11,448	4,168	74,570	17,172	316	14,756	791	8·68	
4725	Byron	ch. l. ..	5·10	14·40	·010	·285	·113	·134	·030	·051	48·90	·0040	·0850	·0200	·0040	8,215	3,257	3,862	1,470	115	2,450	115	6·79	
4726	Ditto	dk. rd. cl. l.	4·10	13·80	·007	·341	·087	·167	·030	·024	48·60	·0030	·0700	·0210	·0030	9,829	2,508	4,814	692	86	2,018	58	6·53	

	PORT CURTIS—																					
4648	Kalpowar	v. dk. br. l.	4·10	16·27	·021	·293	·210	1·160	·720	·370	70·11	·0360	·3572	·0256	·0132	8,605	6,167	34,068	10,866	1,057	10,488	387	7·72
4649	Ditto	v. dk. br. cl.	2·18	9·51	·011	·190	·200	1·170	·690	·310	76·03	·0325	·3168	·0140	·0135	6,613	6,961	40,725	10,790	1,131	12,593	470	8·04
4650	Ditto	dk. gr. br. cl.	·90	9·41	·011	·040	·080	·760	·920	·310	71·21	·0016	·1611	·0322	·0092	1,438	2,806	26,660	10,870	56	5,651	322	7·83
4661	Ditto	dk. br. cl. ..	3·17	10·62	·008	·233	·210	·810	·650	·280	70·36	·0221	·2390	·0728	·0127	7,983	7,195	27,753	9,594	757	8,189	435	6·44
4662	Ditto	gr. bl. cl. ..	2·77	9·83	·006	·214	·220	·800	·620	·250	71·95	·0285	·2168	·0249	·0136	7,565	7,777	28,281	8,838	1,007	7,664	481	6·46
4663	Ditto	gr. bl. cl. ..	2·30	15·63	·007	·207	·190	·710	·830	·240	64·39	·0158	·1809	·0167	·0085	7,599	6,975	26,065	8,811	580	6,641	312	6·35
4664	Ditto	dk. gr. cl. l.	2·06	7·96	·009	·227	·180	·370	·420	·290	80·69	·0284	·1455	·0503	·0227	7,284	5,776	11,872	9,305	911	4,669	728	5·96
4665	Ditto	dk. gr. cl.	1·40	8·49	·014	·121	·130	·360	·330	·210	81·54	·0119	·1108	·0236	·0129	4,659	4,808	13,314	7,766	440	4,098	477	5·82
4666	Ditto	gr. cl. l. ..	1·07	6·04	·011	·126	·150	·420	·390	·180	79·50	·0044	·1358	·0294	·0057	4,475	5,425	15,190	6,510	159	4,911	206	6·35
	DARLING DOWNS—																					
4652	Warwick	bl. l. ..	1·70	8·40	·007	·323	·027	·344	·160	·509	75·10	·0005	·2330	·0480	·0010	8,783	734	9,354	13,841	13	6,336	27	7·31
4653	Mackintyre Brook ..	dk. gr. s. cl.	1·20	3·80	·015	·132	·069	·352	·260	·458	86·30	·0120	·1630	·0440	·0010	4,164	2,176	11,104	14,447	378	5,142	32	6·97
4654	Ditto	md. br. s. cl.	·84	2·20	·015	·108	·049	·163	·143	·399	88·70	·0050	0930	·0440	·0010	3,935	1,785	5,940	14,539	182	33,89	36	7 42
4655	Ditto	md. br. s. cl.	1·16	3·40	·010	·172	·055	·365	·259	·437	85·10	·0140	1630	·0220	·0020	5,800	1,855	12,305	14,736	472	5,496	68	7·81
4656	Ditto	md. br. s. l.	1·07	2·40	·060	·142	·031	·191	·175	·327	90·50	·0070	·1480	·0280	·0070	5,020	1,096	6,752	11,560	247	5,232	247	6·24
4657	Ditto	gr. s. cl. ..	1·33	3·50	·015	·148	·076	·222	·197	·488	85·50	·0070	·1230	·0320	·0040	4,910	2,521	7,365	16,190	232	4,081	132	7·33
4724	Warwick	dk. gr. br. s. l.	·97	2·68	·006	·056	·002	·100	·090	·160	93·46	·0003	·0386	·0195	·0144	2,451	44	4,378	7,005	13	1,689	630	7 31
	WIDE BAY—																					
4636	Dagun	ch. cl. l. ..	1·40	5·80	·010	·200	·097	·298	·307	1·080	79·50	·0010	·2170	0220	·0110	6,363	3,086	9,195	34,360	32	6,904	350	8·56
4639	Mundubbera ..	rd. cl. l. ..	·21	5·41	·010	·004	·031	·117	·015	·072	85·00	·0005	·0520	0020	·0020	142	1,104	4,168	2,565	18	1,852	71	7·59
4640	Cooroy	yl. br. cl. ..	1·67	11·04	·002	·382	·040	1·230	·040	·990	72·90	·0104	·2873	0172	·0248	10,971	1,738	41,141	33,113	348	9,609	829	7·67
4647	Calico Creek ..	dk. br. s. cl.	1·68	9·28	·013	·284	·180	·360	1·070	·960	68·28	·0062	·1440	·0211	·0059	[illegible]	6,314	33,676	12,628	217	5,051	207	7·27
4669	Howard	dk. gr. br. s.	1·44	2·09	·004	·090	·010	·090	·060	·060	96·15	0008	·0370	·0084	·0069	3,714	416	3,744	2,496	33	1,539	287	5·92
4675	Maryborough ..	lt. gr. br. st. cl.	·85	7·80	..	..	.	·145	..	..		·0107	·1272	·0211	0098	5,285	.		.	384	4,566	352	6·06
4676	Kinellen	dk. rd. cl. ..	2·26	16·05	·003	·281	·180	·490	·100	180	50·72	·0136	2366	·0368	0330	9,399	6,020	16,389	6,020	455	7,014	1,104	7·92
4681	Gallengowan ..	dk. gr. bl. l.	5·90	19·10	·010	·811	·157	1·510	·370	·138	59·00	·0140	·5080	·0200	·0190	20,731	4,013	38,598	3,527	358	12,985	505	6·85
4682	Ditto	dk. br. cl. l.	4·20	12·60	·010	·596	·300	1·270	·821	·514	57·00	·0620	5070	0060	·0150	17,180	647	36,608	14,816	1,787	14,614	432	7·33
4683	Ditto	ch. l. ..	2·60	12·80	·010	·409	·245	·600	·582	392	66·90	·0360	·3060	0330	·0250	10,788	6,462	15,826	10,340	950	8,072	659	6·56
4689	Gympie	dr. rd. l. ..	2·73	15·51	008	·231	·060	·070	·010	·050	50 71	·0009	0228	·0037	0133	7,035	1,820	12,132	1,523	27	694	405	1·97
4690	Ditto	lt. ch. l. ..	3·00	15·81	·011	·252	·070	·090	·020	·030	50·49	0012	·0412	·0128	0126	7,949	2,208	2,839	976	38	1,299	410	5·64
4703	Imbil	..	..	..	..	..	..	..	..	.	.	·0020	·2350	1230	·0060	..	..	..	.	52	6,135	157	7·88
4704	Ditto	..	..	..	..	..	..	..	.	..	.	·0010	·0980	·1290	·0030	..	..	..	..	31	2,908	94	8·06
4705	Ditto	..	..	..	..	..	..	..	..	..	..	·0020	·1040	·1230	·0040	..	..	..	..	57	2,998	115	7·55
4706	Ditto	..	..	..	..	..	..	..	.	..	..	·0040	·1000	·1230	·0050	..	..	..	..	119	2,991	149	8·05

Table I.—ANALYSES OF QUEENSLAND SOILS—*continued*.

Laboratory No.	Locality.	Description of Soils.	TOTAL ELEMENTS IN THE SOIL, CALCULATED ON SOIL DRIED AT 100° C.									Available Plant Food, Soluble in 1 per cent. Citric Acid.				Total Elements Lb. per Acre, 12″ Deep.				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. per Acre, 12″ Deep.			SOIL ACIDITY.	Remarks.
							Soluble in Hydrochloric Acid, Sp. Gr. 1·15.																PH.	
			Humus.	Combined Water and other Organic Matter.	Chlorine.	Nitrogen.	Phosphoric Acid.	Lime.	Magnesia	Potash	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid	Lime.	Potash.	Phosphoric Acid.	Lime.	Potash.	Water Suspension 1:2	
			%	%	%	%	%	%	%	%	%	%	%	%	%									
4670	COOK— Weipa	ch. l. ..	2·27	12·38	·009	·106	·100	·080	·020	·010	60·68	·0053	·0536	·0141	·0035	3.343	3,154	2,523	315	167	1,691	110	6·01	
4671	Ditto	dk. br. l. ..	·95	11·46	·004	·116	·040	·060	·020	·004	60·41	·0021	·0267	·0136	·0026	3,785	1,305	1,958	130	68	817	85	5·93	
4672	Ditto	ch. s. ..	1·86	3·59	·007	·073	·040	·050	·020	·030	90·01	·0036	·0090	·0066	·0045	2,997	1,642	2,053	1,232	148	369	184	5·79	
4673	Mitchell River ..	gr. br. st. cl.	1·61	6·81	·024	·160	·140	·500	·320	·730	77·97	·0026	·2102	·0099	·0189	5,787	5,063	18,083	26,620	817	7,602	683	7·12	
4674	Ditto	dk. gr. br. st. cl.	2·01	6·19	·009	·150	·120	·450	·290	·530	82·04	·0185	·1757	·0114	·0089	5,425	4,242	15,908	17,736	654	6,211	315	6·75	
4700	WARREGO— Wyandra	dk. gr. br. s.	·39	1·20	·002	·045	·400	·100	·110	·110	97·04	·0168	·0649	·0216	·0121	1,982	17,621	4,405	4,846	740	2,859	533	8·10	
4702	NORTH KENNEDY— Oonoonba	dk. gr. br. s. cl.	·83	3·23	·003	·039	·030	·310	·170	·230	90·52	·0025	·1064	·0220	·0112	1,622	1,248	12,898	9,569	104	4,427	466	7·45	
4624	SOUTH KENNEDY— Mackay	gr. cl. l. ..	1·39	5·26	·010	·088	·130	·490	·140	·150	83·10	·0085	·0583	·0065	·0180	3,039	4,489	16,922	5,180	293	2,013	622	5·54	
4625	Ditto	dk. gr. br. cl.	1·55	5·80	·010	·088	·080	·180	·110	·070	77·35	·0020	·0648	·0080	·0113	3,182	2,893	6,510	2,531	72	2,346	408	5·72	
4626	Ditto	v. dk. br. cl. l.	1·97	13·49	·005	·213	·020	·970	·220	·150	66·28	·0162	·2271	·0100	·0045	6,835	642	31,125	4,813	519	7,287	144	6·90	
4627	Ditto	dk. gr. br. l.	1·02	5·91	·004	·122	·060	·090	·080	·120	79·03	·0029	·0560	·0101	·0161	4,346	2,137	3,206	4.275	103	1,995	573	6·04	
4628	Ditto	gr. s. l. ..	·96	4·02	·004	·079	·040	·150	·100	·100	90·72	·0033	·0295	·0091	·0116	2,986	1,512	5,669	3.780	125	1,115	438	5·35	
4629	Ditto	dk. gr. br. cl. l.	1·82	7·34	·007	·122	·070	·370	·260	·040	71·52	·0002	·0421	0091	·0052	4,445	2,551	13,482	1,457	7	1,534	189	5·97	
4630	Ditto	gr. s. l. ..	·77	2·84	·007	·056	·070	·420	·580	·130	90·94	·0018	·0323	·0103	·0093	2,284	2,855	17,131	5,302	73	1,317	379	5·78	
4631	Ditto	gr. br. cl. l.	·90	4·48	·008	·231	·040	1·110	·170	·120	82·09	·0027	·0540	·0111	·0078	8,292	1,436	39,844	4,308	97	1,615	280	5·33	
4632	Ditto	lt. gr. cl. ..	1·38	4·69	·008	·103	·020	3·810	·220	·530	97·50	·0060	·0571	·0102	·0096	3,697	718	13,762	19,024	215	1,856	344	5·54	
4633	Ditto	dk. br. cl. l.	4·05	18·27	·009	·232	·140	·390	·330	·040	39·77	·0011	·1696	·0132	·0073	7,444	4,492	12,514	1,283	35	5,442	234	5·84	
4634	Ditto	br. yl. s. cl.	·58	10·86	·010	·040	·020	1·570	·930	·220	68·60	·0026	·0554	·0101	·0101	1,555	778	61,052	8,555	101	2,154	393	5·40	
4635	Ditto	v. dk. br. cl. l.	3·24	11·70	·011	·072	·140	·570	·270	·180	67·58	·0038	·1202	·0113	·0074	2,212	4,302	17,515	5,531	117	3,693	227	5·36	
4691	Eungella Range ..	dk. rd. br. l.	10·05	31·91	·012	·814	·640	·070	·010	·070	24·23	·0061	·0411	·0072	·0345	22,799	17,926	1,961	1,961	171	1,151	966	5·61	
4697	Springcliffe	v. dk. br. cl.	4·03	13·51	·004	·244	·050	1·080	·550	·110	61·31	·0019	·3800	·0204	·0025	8,758	1,795	38,767	3,948	68	13,640	89	6·26	
4698	Ditto	dk. gr. br. cl.	1·95	6·78	·005	·117	·010	·890	·170	·100	77·70	·0016	·1446	·0228	·0005	4,104	351	31,221	3,508	56	5,072	17	5·93	
4699	Ditto	br. bl. cl. ..	5·27	13·40	·003	·332	·080	1·170	·170	·190	67·12	·0090	·4958	·0108	·0073	10,112	2,436	35,634	5,786	274	15,100	222	5·39	
4651	NORTH GREGORY— Catumnal	v. dk. br. cl.	·81	8·60	·005	·040	·090	1·370	1·440	·520	70·50	..	..	..	..	1,446	3,255	49,549	18,807	..	..	..	8·33	

Table II.—SOME QUEENSLAND SOILS (PHYSICAL PROPERTIES AND MECHANICAL ANALYSES).

Laboratory No.	Locality.	Description of Soil.	Ph. Water Suspension 2 : 1.	PROPERTIES OF THE SOIL.								MECHANICAL ANALYSES.							CHEMICAL ANALYSES.		
				Apparent Specific Gravity.	Weight of Soil per Acre, 12" deep.	Capacity for Water.	Absorbed Weight of Water, 12" deep.	CAPILLARITY (IN INCHES).				Coarse Sand. ·2–2 m.m.	Fine Sand. ·02–·2 m.m.	Silt. ·002–·02 m.m.	Clay. Less than ·002 m.m.	Loss on Acid Treatment.	Moisture.	Organic Matter removed by Hydrogen Peroxide (by difference).	Humus.	Organic Matter and Combined Water.	Nitrogen.
								After 3 Hours.	After 6 Hours.	After 24 Hours.	After 48 Hours.										
					Tons.	%	Tons.					%	%	%	%	%	%	%	%	%	%
	MORETON—																				
4641	Sunnybank	..	5·80	..	..	..	..	..	..	..	..	38·90	42·10	7·60	9·20	·8	·8	·6	..	..	..
4642	Ditto	..	5·62	..	..	..	..	..	..	..	..	40·10	39·70	8·10	10·58	·4	·7	·5	..	..	..
4643	Manly	..	6·06	..	..	..	..	..	..	..	..	8·30	29·70	19·00	36·80	·6	4·4	1·2	..	..	..
4644	Ditto	..	6·06	..	..	..	..	..	..	..	..	6·30	19·00	13·20	56·40	·6	3·7	·8	..	..	..
4645	Brookfield	..	8·21	..	..	..	..	..	..	..	..	7·50	17·60	20·80	44·70	1·7	6·5	1·2	..	..	..
4646	Ditto	..	8·12	..	..	..	..	..	..	..	..	6·70	16·40	21·40	46·70	1·9	6·0	·9	..	..	..
4658	Tambourine	ch. l.	6·55	1·14	1,383	46	636	10¾	11½	13½	14	·59	4·71	24·42	45·60	4·6	15·1	4·9	4·47	23·34	·441
4659	Ditto	ch. l.	6·58	1·15	1,396	48	670	7⅝	8¾	10⅞	12¼	·54	4·85	22·05	46·80	4·1	17·7	3·8	4·56	23·05	·450
4660	Ditto	ch. l.	6·72	1·14	1,383	46	636	8¾	10	12¾	13⅝	·44	5·30	27·15	41·07	3·6	15·4	6·9	4·48	23·34	·437
4667	Aspley	dk. gr. br. cl. l.	6·22	1·29	1,566	46	720	8¾	10⅜	14	16¼	..	..	..	..	..	..	..	2·23	7·21	·136
4668	Ditto	dk. gr. br. cl. ..	6·15	1·23	1,493	48	716	6¾	8¼	11⅝	13½	..	..	..	..	..	..	..	1·54	7·41	·120
4677	Brisbane Valley	dk. ch. l. ..	7·19	·92	1,117	72	804	4	5	6½	7	19·30	5·90	13·10	15·20	2·9	22·5	21·1	8·90	15·00	·889
4678	Ditto	dk. rd. br. l. ..	6·12	·89	1,080	84	907	6	7¼	9¼	10½	7·80	22·70	20·20	8·90	3·9	10·9	25·6	7·20	16·80	·742
4679	Ditto	ch. l.	7·41	1·05	1,274	86	1,095	5¾	6¾	9¼	10	7·20	9·70	20·60	26·40	4·1	11·5	20·5	6·00	14·00	·796
4680	Ditto	gr. bl. l. ..	6·49	·98	1,190	78	928	6	7	9	10¼	6·70	13·50	30·10	26·40	3·2	7·1	13·0	2·20	10·40	·271
4684	Benarkin	br. cl. l. ..	5·73	1·21	1,469	42	617	8½	10¾	14½	16¾	8·33	29·73	28·95	25·67	4·4	2·5	·3	3·50	11·95	·238
4685	Ditto	gr. br. s. l. ..	5·68	1·20	1,457	52	757	8¼	10½	13⅞	15	5·60	33·88	30·70	21·42	3·3	2·5	2·5	3·10	10·41	·198
4686	Yarraman	dk. rd. cl. l. ..	6·79	1·21	1,469	48	705	5¾	6⅜	7⅞	9	7·16	13·10	17·32	53·95	2·9	5·1	·4	2·36	20·21	·312
4687	Ditto	dk. br. cl. l. ..	7·23	1·16	1,408	56	788	6	6⅞	8½	9½	6·52	15·58	18·00	50·25	2·4	5·7	1·5	3·09	16·57	·326
4692	Byron	rd. br. cl. ..	5·52	1·12	1,360	66	898	..	..	..		1·40	10·30	26·80	55·60	2·4	2·4	1·1	1·84	15·00	·172
4693	Ditto	md. br. cl. ..	5·43	1·23	1,493	56	836	..	..	..		3·90	20·90	21·00	49·20	1·3	2·4	1·3	1·28	8·70	·126
4694	Ditto	md. br. cl. ..	5·25	1·18	1,432	64	919	..	..	..	..	1·00	20·50	28·40	45·20	2·0	2·0	·9	1·50	10·30	·189
4695	Ditto	gr. br. cl. ..	5·11	1·24	1,505	60	903	9	12½	20½	23	3·30	22·00	27·30	41·80	2·2	2·6	·8	1·64	9·00	·155
4696	Yarraman	dk. rd. l. ..	6·99	1·11	1,347	64	862	5¾	6½	8⅜	9⅞	..	..	..	..	..	..	..	4·45	18·00	·386
4701	Baker's Creek	gr. bl. l. ..	6·19	1·02	1,238	76	941	4½	6¼	8	9¼	7·60	13·70	38·60	29·40	3·4	4·8	2·5	2·46	10·10	·312
4719	Kilcoy	br. l.	8·44	1·06	1,287	62	798	4	5	7¼	8¾	15·50	11·80	26·40	23·60	3·8	6·2	12·7	4·40	8·10	·250
4720	Ditto	br. l.	7·07	1·02	1,238	62	767	4⅞	6	8¾	10¼	23·00	10·60	24·80	26·20	1·3	7·0	7·1	3·30	8·60	·415
4721	Ditto	br. l.	8·84	1·02	1,238	62	767	4½	5¾	8¼	9¾	18·60	13·90	23·00	27·00	1·9	10·6	5·0	4·20	8·20	·332
4722	Ditto	br. l.	8·68	·97	1,177	64	753	4¾	6¼	9	10¾	12·00	17·40	25·60	27·00	2·1	9·7	6·2	3·40	8·30	·434
4725	Byron	ch. l.	6·79	1·06	1,287	44	566	3½	5	8	9¼	4·50	18·00	20·40	23·00	6·7	17·6	9·8	5·10	14·40	·285
4726	Ditto	dk. rd. cl. l. ..	6·53	1·06	1,287	52	669	7	7⅞	9¼	10¼	2·20	9·70	15·00	34·00	7·0	16·2	15·9	4·10	13·80	·341
	PORT CURTIS—																				
4648	Kalpowar	v. dk. br. l. ..	7·72	1·08	1,311	56	734	3½	4⅝	5¾	6	..	..	..	..	..	..	..	4·10	16·27	·293
4649	Ditto	v. dk. br. cl. ..	8·04	1·28	1,554	50	777	3½	4⅝	8½	10¼	..	..	..	..	..	..	..	2·18	9·51	·190
4650	Ditto	dk. gr. br. cl. ..	7·83	1·29	1,566	58	908	0½	0⅝	1⅛	1⅜	..	..	..	..	..	..	..	·90	9·41	·040
4661	Ditto	dk. br. cl. ..	6·44	1·26	1,529	50	746	6¼	8	11	12½	..	..	..	..	..	..	..	3·17	10·62	·233
4662	Ditto	gr. bl. cl. ..	6·46	1·30	1,578	48	743	5¾	7½	10¾	12⅝	..	..	..	..	..	..	..	2·77	9·83	·214
4663	Ditto	gr. bl. cl. ..	6·35	1·35	1,639	50	819	4⅞	5¾	9⅝	10⅝	..	..	..	..	..	..	..	2·30	15·63	·207
4664	Ditto	dk. gr. cl. l. ..	5·96	1·18	1,432	56	802	5¾	7	9¾	10⅞	..	..	..	..	..	..	..	2·06	7·96	·227
4665	Ditto	dk. gr. cl. ..	5·82	1·36	1,651	42	693	5⅛	7⅜	12⅜	14⅞	..	..	..	..	..	..	..	1·40	8·49	·126

Table II.—SOME QUEENSLAND SOILS (PHYSICAL PROPERTIES AND MECHANICAL ANALYSES)—*continued.*

Laboratory No.	Locality.	Description of Soil.	Ph. Water Suspension 2 : 1	PROPERTIES OF THE SOIL. Apparent Specific Gravity.	Weight of Soil per Acre, 12" deep.	Capacity for Water.	Absorbed Weight of Water, 12" deep.	CAPILLARITY (IN INCHES). After 3 Hours.	After 6 Hours.	After 24 Hours.	After 48 Hours.	MECHANICAL ANALYSES. Coarse Sand. ·2–2 m.m.	Fine Sand. ·02–·2 m.m.	Silt. ·002–·02 m.m.	Clay. Less than ·002 m.m.	Loss on Acid Treatment.	Moisture.	Organic Matter Removed by Hydrogen Peroxide (by difference).	CHEMICAL ANALYSES. Humus.	Organic Matter and Combined Water.	Nitrogen.
					Tons.	%	Tons.					%	%	%	%	%	%	%	%	%	%
	PORT CURTIS—*continued.*																				
4666	Kalpowar	gr. cl. c.	6·35	1·33	1,614	44	710	4½	6¼	10¼	13½				..	..	..	..	1·07	6·04	·126
4707	Ditto	dk. rd. l.	5·95									1·00	6·60	13·40	65·20	1·6	9·2	3·0	..	..	
4708	Ditto	..	4·57	..								·90	5·40	11·90	70·20	·9	9·1	1·6			
4709	Ditto	..	4·37									1·00	4·50	9·50	74·90	·9	7·5	1·7			
4710	Ditto		6·15									3·00	8·00	18·50	54·90	2·1	11·4	2·1	..		
4711	Ditto		5·57									2·80	7·50	13·40	64·00	1·5	10·0	1·8	..		
4712	Ditto	..	4·84		..							2·60	6·80	11·00	67·10	1·2	9·9	1·4	..		
4713	Ditto	..	6·80		..							1·70	19·80	16·50	49·90	4·1	7·8	·2	..		
4714	Ditto	..	8·00	..	..							·40	19·50	17·70	50·90	4·8	7·9	..			
	DARLING DOWNS—																				
4652	Warwick	bl. l.	7·31	1·00	1,214	66	801	5½	6¾	10½	12¼							..	1·70	8·40	·323
4653	Macintyre Brook	dk. gr. s. cl.	6·97	1·16	1,408	46	648	8¼	9½	13	15¼	2·00	34·70	19·40	39·30	1·3	2·5	[illegible]	1·20	3·80	·132
4654	Ditto	md. br. s. cl.	7·42	1·34	1,627	34	553	6	8¾	13¼	16½	13·40	26·10	22·00	35·50	·9	1·5	·6	·84	2·20	·108
4655	Ditto	md. br. s. cl.	7·81	1·24	1,505	42	632	6½	8¾	14¼	18¼	4·30	24·20	28·20	38·60	2·0	2·2	·5	1·16	3·40	·172
4656	Ditto	md. br. s. l.	6·24	1·30	1,587	38	600	5	7¾	11	13½	12·50	37·00	12·80	33·70	1·9	1·2	·9	1·07	2·40	·142
4657	Ditto	gr. s. cl.	7·33	1·22	1,481	44	652	5¾	7½	11	13½	17·20	26·20	13·00	39·60	1·2	2·2	·6	1·33	3·50	·148
4688	Jandowae	..	6·20	..	..	.	..	.	..	..		18·80	45·40	6·90	20·50	1·4	1·5	5·5	..	..	..
4724	Warwick	dk. gr. br. s. l.	7·31	1·61	1,954	28	547	5¾	7½	11½	13¼			.		.	.	..	·97	2·68	·056
	WIDE BAY—																				
4636	Dagun	ch. cl. l.	8·56	1·17	1,420	52	738	5½	5¾	7¼	8		..	..	..	..	..	..	1·40	5·80	·200
4639	Mundubbera	rd. cl. l.	7·59	1·31	1,590	44	700	9½	10½	13½	15	..	.		..	..	..	..	·21	5·40	·004
4640	Cooroy	yl. br. cl.	7·67	1·23	1,493	46	686	5½	6¾	9¾	10¼	5·12	10·84	31·60	40·07	1·3	8·1	2·8	1·67	11·04	·328
4647	Calico Creek	dk. br. s. cl.	7·72	1·29	1,566	36	564	5½	6⅝	9½	10⅞	.			.	..	..	..	1·68	9·28	·284
4669	Howard	dk. gr. br. s.	5·92	1·53	1,857	36	668	9⅜	10⅝	12⅝	13¾		..		..	..	..	..	1·44	2·09	·090
4675	Maryborough	lt. gr. br. st. cl.	6·69	1·32	1,602	46	737	4⅛	6	10¾	12¼		.	..	..	..	..	..	·85	7·80	·145
7676	Kinellan	dk. rd. cl.	7·92	1·23	1,493	50	746	8¼	10⅛	14⅞	17⅛	.	..	..	..	..	..	..	2·26	16·05	·281
4681	Gallangowan	dk. gr. bl. l.	6·85	·94	1,141	102	1,164	4½	5½	7	7½	10·90	17·70	8·30	24·10	5·3	10·2	23·5	5·90	19·10	·811
4682	Ditto	dk. br. cl. l.	7·33	1·06	1,286	84	1,080	5¼	7	9½	11	16·50	16·50	15·10	26·30	4·1	6·1	15·4	4·20	12·60	·596
4683	Ditto	ch. l.	6·56	·97	1,177	82	965	6½	7¾	10	11¾	13·20	20·80	19·70	24·30	3·6	4·1	14·3	2·60	12·80	·409
4689	Gympie	dk. rd. l.	4·97	1·12	1,359	69	937	9¼	10⅝	13⅜	14⅞	..	..	..	..	..	..	..	2·73	15·51	·231
4690	Ditto	lt. ch. l.	5·64	1·16	1,408	52	937	9½	10⅝	11¾	13⅛	.	..	..	..	..	..	..	3·00	15·81	·252
4703	Imbil	..	7·88	·96	1,165	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·179
4704	Ditto	..	8·06	1·15	1,396	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	·148
4705	Ditto	..	7·55	1·06	1,287	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	·202
4706	Ditto	..	8·05	1·10	1,335	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	·138

	COOK—																				
4670	Weipa	ch. l.	6·01	1·16	1,408	48	657	10¾	12¾	16⅛	17⅝	..	..	..	..	..	..	..	2·27	12·38	·106
4671	Ditto	dk. br. l.	5·93	1·20	1,457	44	461	10½	12¾	17½	19⅝	..	..	..	..	..	..	..	·95	11·46	·116
4672	Ditto	ch. l.	5·79	1·51	1,833	30	550	3¾	4⅛	4¾	5¼	..	..	..	..	..	..	..	1·86	3·59	·037
4673	Mitchell River	gr. br. st. cl.	7·12	1·33	1,614	44	705	3¾	5⅝	9¼	12⅝	..	..	..	..	..	..	..	1·61	6·81	·160
4674	Ditto	dk. gr. br. st. cl.	6·75	1·30	1,578	38	599	4⅛	6⅛	10⅝	12⅜	..	..	..	..	..	..	..	2·01	6·19	·150
	WARREGO—																				
4700	Wyandra	dk. gr. br. s.	8·10	1·62	1,996	28	550	12	13	14⅝	15⅝	..	..	..	..	..	..	..	·39	1·20	·045
4715	Jimbour Valley	cl.	8·50	..	..	..	..	..	..	..	..	·43	32·90	12·40	42·10	5·3	6·1	·8	..	..	·056
4716	Ditto	cl.	8·90	..	..	..	..	..	..	..	..	·20	34·50	9·80	46·10	5·6	4·6	..	..	..	·050
4717	Ditto	cl. l.	9·10	..	..	..	..	..	..	..	..	8·10	25·80	2·80	49·60	3·3	7·1	3·3	..	..	·056
4718	Ditto	cl. l.	8·70	..	..	..	..	..	..	..	..	9·90	30·40	10·50	43·00	2·9	6·0	..	..	..	·056
	NORTH KENNEDY—																				
4702	Oonoonba	dk. gr. br. s. cl.	7·45	1·53	1,857	36	668	9⅝	11⅝	17⅝	21¼	27·92	43·04	15·80	11·42	·5	1·1	·2	·83	3·23	·039
	SOUTH KENNEDY—																				
4624	Mackay	gr. cl. l.	5·54	1·27	1,542	48	740	4¾	6⅝	10	12¾	6·43	30·26	37·47	21·07	·06	3·1	1·5	1·39	5·26	·088
4625	Ditto	dk. gr. br. cl.	5·72	1·33	1,614	36	581	6¼	7¾	11	12¾	18·56	29·20	17·60	28·77	·30	5·2	·3	1·55	5·80	·088
4626	Ditto	v. dk. br. cl. l.	6·90	1·18	1,432	42	601	2½	4	6¾	8¼	26	20·03	25·77	38·75	·34	10·7	4·1	1·97	13·49	·213
4627	Ditto	dk. gr. br. l.	6·04	1·31	1,590	52	827	9	11⅛	16	18¾	14·63	39·95	19·25	20·57	·34	3·9	1·3	1·02	5·91	·122
4628	Ditto	gr. s. l.	5·35	1·39	1,687	42	708	4¾	5¾	8¾	10	22·91	41·46	17·85	13·15	·41	1·8	2·3	·96	4·02	·079
4629	Ditto	dk. gr. br. cl. l.	5·97	1·34	1,627	45	732	7½	9⅜	12¾	14⅜	..	..	..	..	..	..	..	1·82	7·34	·122
4630	Ditto	gr. s. l.	5·78	1·50	1,821	30	546	6⅝	8⅛	11¾	13⅞	36·62	38·97	10·27	10·97	·36	1·4	1·3	·77	2·84	·056
4631	Ditto	gr. br. cl. l.	5·33	1·32	1,602	38	608	6	7⅞	12	14½	12·23	40·11	21·85	19·17	·56	2·9	3·1	·90	4·48	·213
4632	Ditto	lt. gr. cl.	5·54	1·32	1,602	40	641	2⅞	4¼	8¼	11½	5·33	37·22	35·62	16·67	1·84	2·1	1·1	1·38	4·69	·103
4633	Ditto	dk. br. cl. l.	5·84	1·18	1,432	52	744	7¾	9	11½	12⅝	1·01	10·53	26·20	56·65	2·40	8·6	·5	4·05	18·27	·232
4634	Ditto	br. yl. s. cl.	5·40	1·43	1,736	36	625	5⅞	7½	11⅛	13½	8·31	42·32	23·80	16·05	3·73	3·9	1·9	·58	10·86	·040
4635	Ditto	v. dk. br. cl. l.	5·36	1·13	1,372	56	768	7½	8¾	10½	11½	10·32	28·06	17·62	29·03	3·43	6·8	4·7	3·24	11·70	·072
	NORTH GREGORY—																				
4651	Catumnal	v. dk. br. cl.	8·33	1·33	1,614	52	839	5½	8½	14⅞	19	..	..	..	..	..	..	..	·81	8·06	·040

Table III.—ANALYSES OF PASTURE GRASSES, ROUGHAGE, HERBAGE, AND SHRUBS, &c.

Number of Analysis.	Month Cut.	Name of Grass, Herbage, or Shrub.	Local Name.	District.	ANALYSIS OF WATER-FREE MATERIAL.							Remarks. (Chiefly made by senders.)
					Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P_2O_5.	
					%	%	%	%	%	%	%	
631	July	*Urochloa tricopus*	..	South Johnstone ..	9·8	0·6	49·0	31·0	9·6	0·523	0·434	
632	July	*Urochloa bulbodes*	..	South Johnstone ..	13·6	1·2	47·3	26·0	11·9	0·746	0·372	
633	July	*Melinis minutiflora*	..	South Johnstone ..	8·4	1·2	56·6	27·8	6·0	0·220	0·345	
634	July	*Brachiaria decumbens*	..	South Johnstone ..	14·7	1·0	48·6	25·4	10·3	0·481	0·450	
1998	September ..	*Astrebla sp.*	Mitchell Grasses	Blackall	4·4	1·4	48·7	34·8	10·7	0·300	0·187	
1678	August ..	*Atylosia reticulata*	..	Mingela	12·3	2·6	51·9	26·5	6·7	2·27	0·302	HCN nil. Leaves only.
1679	August ..	*Atylosia reticulata*	..	Mingela	4·9	1·0	39·7	50·7	3·7	1·34	·253	Stalks only.
..	August ..	*Atylosia reticulata* (composite)	..	Mingela	9·9	2·2	47·9	34·5	5·5	1·97	0·286	Calculated from 1678 and 1679.
2640	September ..	Lucerne	..	Atherton	23·8	1·5	42·3	21·4	11·0	2·44	0·579	
2641	September ..	Lucerne	..	Atherton	23·2	1·2	37·7	26·4	11·5	1·913	0·606	
2642	September ..	Lucerne	..	Atherton	22·6	1·6	42·9	22·3	10·6	2·63	0·504	
2643	September ..	Lucerne Meal	..	Atherton	19·4	1·3	41·1	28·4	9·8	2·034	0·461	
2919	October ..	*Tetragonia expansa*	..	Tara	15·7	1·5	36·7	17·3	28·8	1·082	0·352	Fe ·019, HCN nil.
2929	October ..	Mixed Grasses	..	Beechmont	12·2	1·9	48·6	29·6	7·7	0·539	0·455	
3327	October ..	*Avicennia marina var. resinifera*	..	Myrtletown	11·4	1·1	55·7	18·5	13·3	0·557	0·382	
3629	November ..	*Cyperus rotundus*	Nut Grass	Gatton	19·0	1·3	46·7	18·3	14·7	0·718	0·980	K_2O 5·0, foliage.
3678	November ..	*Avicennia marina*	White Mangrove ..	Mount Pelion ..	12·6	1·4	49·2	23·6	13·2	0·477	0·477	
4492	December ..	*Cyperus rotundus*	Nut Grass	Gatton	3·0	1·3	83·0	8·8	3·9	0·264	0·820	Nut and rhizomes.
4796	January ..	*Sida corrugata*	..	Longreach	17·9	1·0	42·6	24·3	14·2	3·0	0·550	Extensively eaten by stock. Probably of great value when eaten with grasses and other herbage.
4797	January ..	*Astrebla lappacea*	Curly Mitchell Grass ..	Longreach	14·9	1·3	38·8	28·5	16·5	0·870	0·448	Value well known.

4798	January	*Tribulus terrestris*	Goat Head	Longreach	17·3	1·2	38·0	21·3	22·2	5·93	0·817	Caused photosensitisation in South Africa
4799	January	*Crotalaria trifoliastrum*	..	Longreach	19·5	1·0	34·8	30·3	14·4	1·89	0·574	Often neglected by stock. Value unknown.
7151	April	*Boerhaavia diffusa*	..	Longreach	18·3	1·1	43·1	19·9	17·6	3·94	0·537	
7152	April	*Malvastrum spicatum*	..	Longreach	16·9	1·4	33·0	20·1	28·6	3·95	0·768	Dirt in sample.
7153	April	*Justicia procumbens*	..	Longreach	14·3	1·4	24·5	18·2	41·6	4·92	0·622	Dirt in sample.
7154	April	*Cyperus bifax*	..	Longreach	11·4	1·2	48·4	27·4	11·6	1·04	0·562	Contaminated with *Paspalidium jubiflorum.*
7155	April	*Trianthema crystallina*	..	Longreach	13·0	0·9	35·6	17·9	32·6	1·54	0·583	
7156	April	*Ipomœa reptans*	..	Longreach	22·5	2·5	40·7	20·3	14·0	1·88	0·803	
7157	April	*Salsola kali*	..	Longreach	15·6	1·1	34·1	17·1	32·1	5·21	0·306	
7158	April	*Tribulus terrestris*	Goat Head	Longreach	16·9	1·9	33·5	28·8	18·9	5·06	0·630	
7159	April	*Portulacca oleracea*	..	Longreach	16·2	1·6	31·7	18·1	32·4	2·84	0·399	Sample not dry. Mean H_2O (72%) taken.
7160	April	*Crotalaria dissitiflora*	..	Longreach	19·2	2·0	33·6	30·2	15·0	1·71	0·592	
7161	April	*Amarantus Mitchelli*	..	Longreach	16·2	1·8	38·9	26·2	16·9	4·38	0·429	
7162	April	*Boerhaavia diffusa*	..	Longreach	14·9	1·7	37·9	28·7	16·8	2·98	0·533	
7163	April	*Indigofera parviflora*	..	Longreach	22·3	1·5	41·4	19·7	15·1	4·97	0·660	
7164	April	*Rhynchosia minima*	..	Longreach	17·8	2·9	40·0	28·0	11·3	1·87	0·652	
7165	April	*Trianthema decandra*	..	Longreach	14·2	1·6	44·0	19·5	20·7	3·33	0·696	
7166	April	Mixed Grasses	..	Longreach	15·4	1·6	41·7	24·1	17·2	2·45	0·517	
7184	April	Ensilage (Button Grass)	..	Mackinlay	12·5	1·3	41·8	25·1	19·3	1·63	0·760	Total acids as acetic in sample as received = ·39 per cent.
8027	May	*Oryza Australiensis*	Wild or Australian Rice	Julia Creek	7·2	1·1	35·2	31·7	24·8	0·440	0·412	
8028	May	*Echinochloa Turneriana*	..	Julia Creek	5·2	1·0	41·9	30·8	21·1	0·567	0·729	A native millet.
8029	May	*Aeschynomene indica*	..	Julia Creek	13·7	0·9	41·9	35·5	8·0	1·85	0·499	
7406	April	..	Galvanised Burr	Gatton	24·6	1·1	33·5	26·2	14·6	2·27	0·694	
8087	May	Cow Feed	..	Lindum	5·8	2·1	45·5	29·2	17·4	0·788	0·468	
8208	May	Grasses	..	Jimbour	4·6	0·7	50·6	32·9	11·2	0·377	0·228	
8209	May	Grasses	..	Jimbour	4·1	0·5	47·0	32·7	15·7	0·297	0·201	
8207	May	..	Narrow-leafed Mulga	Yaraka	12·9	2·6	54·9	25·2	4·4	1·56	0·191	

REPORT OF THE EDITOR OF PUBLICATIONS.

The Publicity Branch, which fulfils a very important function in the organisation of the Department, maintained an extensive informational service throughout the year. The chief channels of communication are departmental publications, the Press, and the radio services.

The Queensland Agricultural Journal, which has entered on its 43rd year of useful service to the primary producers of the State, continues to maintain a high standard, both in respect of subject-matter and make-up. Regular contributions by officers of the research and field staffs have assured its value to every branch of rural industry. More than a hundred special papers and articles, many of which contained the results of original laboratory and field work, were contributed by these officers in the course of the year. Seasonal notes on farm practice, management and equipment also were published regularly.

The circulation of the *Journal* increased slightly, the distribution for the year approximating 113,000 copies.

The Weekly News Bulletin is now in its fourth year of publication, and through it a regular press service is supplied to every newspaper in the State. Its object is to make available practical notes of seasonal and educational value, and recommendations in respect of specific remedies and their application, in the form of agricultural news. The *Bulletin* is accepted as an authoritative source of topical information on rural matters. The co-operation of the Press in reprinting its contents is of great value and is appreciated accordingly.

In addition to this regular service, numerous special articles on agricultural progress and related subjects also were supplied for Press publication.

The publicity services of the Department have been extended also to Press contributors and other writers requiring authoritative information on the development of rural industry in Queensland, and suitable illustrations for feature articles. An important aspect of this and similar services is the assurance of reasonable accuracy of matter published, especially in its relationship to the conditions of agriculture and animal husbandry in this State.

Other information on the general agricultural situation from time to time has been prepared and circulated through appropriate channels.

The bulletin service of the Department has a world-wide scope and the demand for Queensland agricultural literature is constant. Most of the literature in the central library has been obtained in exchange for departmental bulletins and the *Journal.* By means of this exchange service, which was extended during the year, officers of the Department were kept well informed on current agricultural thought, discoveries and developments in other countries.

Considerable additions were made to the bulletin, pamphlet, and advisory leaflet series of publications in the course of the year. An aggregate of 74,000 copies of these publications was made available for general distribution.

Three more volumes of *The Queensland Agricultural and Pastoral Handbook* are now in the stage of final proof revision and will soon be ready for press.

Through the courtesy and co-operation of the Australian Broadcasting Commission, broadcast talks on rural topics from national and associated regional radio stations were continued throughout the year. From experience it has been found that unless ordinary talks and lecturettes are on subjects of special public concern they do not hold listeners' interest. In broadcasts arranged by the Department, monologue has, therefore, given way to dialogue. Although more effective than the straight-out talk, it is felt, too, that dialogues do not always succeed in their object. Consequently, a dramatised form of broadcast for farmers has been devised in the belief that dramatic incidents, well written and produced, appeal to people of all ages. The new plan includes the writing and production of short plays or playlets on various rural themes, each with an appropriate climax.

In the photographic section of the Branch, the year was a particularly busy one. In addition to routine work, the services of the section were extended to other public departments. The demand for prints, process blocks and lantern slides remains constant; films of station and farm life and industry also were made available as required.

The delivery of numerous public addresses on different aspects of country life and work was among the activities of the Branch during the term.

CENTRAL LIBRARY.

Many important additions have been made to the central library, and the Department now possesses a very valuable collection of literature on the science and practice of agrciulture and related rural industries.

The exchange service, through which publications covering practically the whole range of rural economy are received regularly from the countries of the world, has been extended.

Through the monthly circulation of a list of library additions, all concerned are kept informed of the availability of the latest literature on the results of agricultural research, and cognate matters.

Sectional libraries also have been well maintained.

A quiet study appropriately equipped has been provided for research workers.

The demand on the library services of the Department increases as the resources and facilities now available become better known.

JOHN REID,
Editor of Publications.

REPORT OF THE DIRECTOR OF MARKETING FOR THE YEAR 1938-39.

In accordance with the provisions of *"The Primary Producers' Organisation and Marketing Acts*, 1926 *to* 1938," I have the honour to submit herewith a report of the operations of the marketing organisations that have been constituted in relation to the various commodities under the legislative measures which have been enacted to provide for the organised marketing of primary products in Queensland.

ARROWROOT BOARD.

Personnel of the Board to 14th April, 1940:—Messrs. R. Stewart (Chairman), C. Brumm, A. Rose, G. R. Walker, L. R. Oxenford, and the Acting Director of Marketing.

The Board was originally constituted on the 1st December, 1922, for the collective marketing of arrowroot bulbs to the arrowroot millers. In 1931, consequent upon a request made by the millers, the provisions of the Act were extended also to arrowroot flour, and, in the following year, ownership of both arrowroot bulbs and arrowroot flour, with the consent of majorities of the growers and millers concerned, was vested in the Board. For many years the Board has been hampered in its endeavours to market these products to the best advantage, because it has not been possible to secure the co-operation of certain of the millers. The principal market for arrowroot flour is in the Southern States, and the Board cannot exercise any jurisdiction over interstate transactions. It has, therefore, been the practice of the majority of the millers, since 1933, to enter into agreements with the Board in relation to the milling of flour.

The following table shows particulars of the Board's transactions for the seasons 1930 to 1937, together with the figures to date for the 1938 season:—

Crops.	Flour Receivals.	Average Selling Price per Ton. (Flour)	Payments to Millers per ton. (Flour)	Payments to Growers per ton. (Bulbs).
	Tons.	£ s. d.	£ s. d.	£ s. d.
1930	953	37 8 9	16 0 0	1 14 6·29
1931	753	36 4 7	13 0 0	1 19 1·27
1932	582	33 2 5·6	13 0 0	1 12 2·18
1933	707	28 4 8	13 0 0	1 4 0·3
1934	721	23 10 0	10 1 1·3	1 0 0
1935	627	22 12 5	8 17 6·2	1 0 0
1936	653	23 3 6	9 15 9·4	1 0 6
1937	346	29 5 0	10 10 0	1 12 1·25
1938	487	(*a*)	13 0 0	2 1 6 (*a*)

(*a*) Season's transactions not yet finalised.

The depressed returns for the seasons 1934 to 1936, were due, in great measure, to the fact that the Board and its associated millers had to meet the competition of the millers who were not parties to the agreement. During those seasons the contracting millers agreed to accept a reduction in their remuneration per ton of flour, so that the growers could be paid a minimum of £1 per ton of bulbs.

The decrease shown in the flour receivals for the 1937 and 1938 seasons is due to lower crop yields, owing to dry conditions in 1937, and excessive rains during the planting and growing periods of 1938. The 1938 season's transactions are to be finalised at an early date by the payment of a further advance to growers on arrowroot bulbs delivered to the Pool.

1939 *Season*.—The indications are that the Board's intake should be slightly in excess of that of the 1938 crop, conditions having been unfavourable owing to dry weather experienced early in the season. As the new season's flour will be coming on to a bare market firm prices are indicated.

ATHERTON MAIZE BOARD.

Personnel of the Board to 31st March, 1942:—Messrs. J. Gargan (Chairman), L. R. Crouch, L. R. Tostevin, W. Bailey, L. A. Favier, and the Acting Director of Marketing.

Twelve candidates contested the election in March last for the appointment of five growers' representatives to the Board for the three years' term which commenced on 1st April, 1939, the ballot resulting in favour of Messrs. Gargan, Crouch, Tostevin, Bailey, and Favier.

1937-38 Season.—As stated in my last annual report, the advances paid to that date amounted to £7 10s. per ton on maize containing 3 per cent. of dead grain, with relative premiums and dockages according to quality. During the period under review a further 11s. 9d. per ton was paid, making the total payment £8 1s. 9d. for that season.

1938-39 SEASON.

OPERATIONS OF STOCK.

Maize Delivered—	Tons.	Tons.	Tons.
Gross delivered by growers		25,675	
Returns to growers	228		
		25,447	
Less Moisture	433		
		25,014	
Plus Carry-over 1937-38 stocks ..		2,282	
			27,296
Maize Despatches—			
Total sales, including stocks		27,897	
Less weight of bags sold as maize ..		336	
		27,561	
Less poultry food ingredients ..		793	
		26,768	
Plus offal sales		322	
			27,090
Net under-run			206

This under-run represents 8 per cent. of the total delivery, as compared with 1·24 per cent. in the previous year.

Marketing.—Excluding sales to maize-growers, aggregating £1,855 14s. 6d., sales ex the 1938-39 crop, together with the carry-over from the preceding season, amounted to £200,580 15s. 10d., comprising whole and crushed maize, poultry, pig, and cattle mashes.

Advances to Growers.—A first advance of £4 per ton was made to growers of maize delivered to the Pool containing 3 per cent. of dead grain, and maize delivered with a lower pecentage of dead grain was paid for 1s. per ton per cent. above this amount; while maize delivered with a higher percentage of dead grain was paid for at 2s. per ton per cent. below this amount. A second advance of 10s per ton was made on 5th November, 1938, a third advance of 5s. per ton on 23rd December, 1938, a fourth advance of 10s. per ton on 19th March, 1939, and a final advance of 14s. 4d. per ton is to be made, making a total advance of £5 19s. 4d. per ton on grain of standard quality. The return per ton to the growers for the season averages £6 0s. 11d.

Pool costs, at the rate of £1 6s. 8d. per ton, included the season's contribution of £2,000 and interest to the T. McHugh Pty. funded debt from the previous season.

Poultry, Pig, and Cattle Foods.—The sales of mashes manufactured by the Board are still increasing, and all machines are working to full capacity. During 1937-38 season 17,368 bags of Athmaze mashes were sold, whereas in the 1938-39 season 37,390 bags were sold. The value realised on maize in mashes was £8 10s. per ton net, after allowing for purchase of other ingredients and cost of mixing and advertising. The Athmaze mash sales, during the period under review, have been the means of disposing of 964 tons of maize extra on the Northern market. The name, Athmaze, is now becoming very popular, and the Board has received very favourable comment from satisfied users.

Export.—Faced with a carry-over of 2,282 tons of maize from the 1937-38 season, and 25,675 tons from the 1938-39 season, the Board was fortunate in making an overseas sale of 7,097 tons at £5 12s. 6d. per ton f.o.b. Cairns. The advantages of this sale were obvious when, during August, 1938, the final consignments were despatched to the wharf and left the silos empty, which allowed the Board to receive the rest of the huge crop without any hindrance or closing down of the plant to clear stocks.

Finance—General.—Standing crop advances were made available to growers to the extent of £4,000, but the full amount was not availed of. Arrangements with the bank have been very satisfactory, and the Board has made suitable arrangements for the forthcoming season.

Handling Costs.—The following table of respective costs since the inception of the Pool is given for purposes of comparison:—

Year.	Tonnage.	Government Interest and Redemption.	Bags.	Silo Costs.	Administration Costs.	Total.	Price to Growers.
		s. d.	*s. d.*	*s. d.*	*s. d.*	£ *s. d.*	£ *s. d.*
1924–25	17,099	..	..	..	..	2 13 8	4 12 0
1925–26	9,232	..	..	..	..	2 3 5	8 10 0
1926–27	22,541	4 6	10 8	12 1	5 4	1 12 8	12 14 6
1927–28	14,222	7 4	10 3	11 9	8 10	1 18 6	5 5 0
1928–29	23,391	4 5	9 3	8 5	4 2	1 6 5	5 10 4
1929–30	14,254	7 3	9 5	10 3	6 7	1 13 8	7 5 0
1930–31	18,006	5 9	6 6	7 7	5 8	1 5 7	6 0 3
1931–32	14,706	7 1	5 8	8 9	7 0	1 8 6	4 11 1½
1932–33	16,918	6 2	8 3	7 9	5 0	1 7 2	7 15 6
1933–34	20,968	5 6	7 0	7 8	4 0	1 4 2	5 4 0
1934–35	7,270	10 11	7 10	12 3	7 5	1 18 5	5 6 0
1935–36	11,431	10 3	6 8	10 9	6 8	1 14 4	7 9 3
1936–37	19,826	6 0	7 0	8 4	4 0	1 5 4	7 10 3
1937–38	26,558	4 6	5 8	7 11	3 4	1 1 5	8 1 9
1938–39	25,675	4 8	5 7	11 4	5 1	1 6 8	6 0 11

BARLEY BOARD.

Personnel of the Board to 23rd April, 1942:—Messrs. E. A. Fitzgerald (Chairman), P. D. Fiechtner, junior, and the Acting Director of Marketing.

Nominations were called in February last for the election of growers' representatives for the three-year term as from 24th April, 1939, the only candidates presenting themselves being Messrs. Fitzgerald and Fiechtner who, as a consequence, were returned unopposed.

1937-38 Season.—In May last the Board decided to finalise this season's transactions by making a final net payment of 3d. per bushel to growers and arranging for the 1938-39 Pool to take over the balance of stocks on hand. The total net payments per bushel to growers for the season in question, less dockages according to quality, were 4s. for Chevalier, 3s. 6d. for Cape, and 3s. for feed barley.

1938-39 Season.—Favourable seasonal conditions during the period of the 1938-39 crop's growth resulted in 122,736 bushels of barley being delivered to the Board, constituting a record since the inception of the Pool, the largest quantity received prior to this year being 113,903 bushels in the 1934-35 season.

This record intake has been classified as follows:—

	Bushels.	Lb.
Chevalier malting	75,336	48
Cape malting	8,165	49
Feed	39,233	08
	122,736	5

To date, growers have been paid a first advance, less dockages according to quality, as follows:—

	Per bushel net on rails at growers' stations.	
	s.	*d.*
Chevalier malting	2	3
Cape malting	1	9
Feed	1	0

The Board has disposed of 37,135 bushels of malting barley to Castlemaine Perkins Ltd., and, in respect to the remainder of the receivals classified under that heading, has entered into contracts with the Queensland Brewery Ltd. and the Cairns Brewery for the supply of same as malt, which is being manufactured on the Board's behalf at "The Maltings," Toowoomba.

In its endeavour to dispose of the stocks of feed barley, the Board has installed a gristing plant at "The Maltings," for the purpose of converting same into meal. Arrangements have also been made for the gristing of feed barley in Brisbane, and the sale of the resultant meal through a Brisbane selling agent appointed by the Board.

BROOM MILLET BOARD.

Personnel of the Board to 31st October, 1940:—Messrs. H. Zischke (Chairman), A. Sallisch, and the Acting Director of Marketing.

1937-38 Season.—During this season, which covered the period from 1st November, 1937, to 31st October, 1938, the Board did not exercise full control, but growers were obliged to deliver their millet to one of the Board's selling agents (State Produce Agency Ltd. or Denham Bros. Ltd., Rockhampton), who disposed of same and accounted direct to individual growers.

The quantity of broom millet received and sold during the season amounted to 71 tons 15 cwt. 3 qrs. 10 lb., which realised £3,219 13s. 9d., the average rate per ton being £44 16s. 8d. The maximum price at which sales were made was £57 10s. per ton and the minimum £15.

The volume of the 1937-38 crop was not sufficient for Queensland requirements, as a consequence of which local manufacturers found it necessary to obtain the balance of their supplies from the Southern States, where fairly large crops were produced.

1938-39 Season.—As it was anticipated that the 1938-39 crop would not be a large one, the Board again decided not to exercise full control, but to carry on in the same manner as last season. From 1st November, 1938, to 30th June, 1939, 102 tons 5 cwt. 2 qrs. 3lb. of broom millet were sold, the realisations amounting to £4,803 8s. 6d., or an average of £46 19s. 3d. per ton. The maximum price obtained was £55 per ton and the minimum £10.

On the 26th April last, the commerce department convened a conference at Sydney with a view to forming a Federal Broom Millet Advisory Committee, whose efforts would be directed towards the stabilisation of the market for this commodity. Growers' representatives from Queensland, New South Wales and Victoria attended the conference, but it was decided that nothing could be done until a growers' organisation had been formed in both New South Wales and Victoria. The delegates from those States agreed to make a move in this direction as early as possible.

BUTTER BOARD.

Personnel of the Board to 31st December, 1941:—Messrs. J. Purcell (Chairman), J. McRobert, T. F. Plunkett, A. G. Muller, W. J. Sloan, C. W. Thiele, and the Acting Director of Marketing.

Production.—Particulars showing the quantity of butter manufactured in Queensland during the year 1938-39, also sales and consignments for the same period, are contained in Appendix 1. The year's production constitutes a record for the State. From the table shown in Appendix 2, the year's figures may be compared with those for the preceding thirteen years.

Consumption.—The figures shown as Queensland sales in Appendices 1 and 2 relate only to butter of Queensland manufacture, and do not reflect the actual position in regard to the State's butter consumption.

The actual quantity of butter consumed in Queensland during the year amounted to 537,915 boxes, made up as follows:—

	Boxes (56 lb.)
Butter of Queensland manufacture, as indicated in Appendix 1 ..	525,915
Imports from other States (Border Trade Sales)	12,000
	537,915

The following table shows the consumption of butter in Queensland since the Board commenced operations:—

Year.	Consumpton (inclusive of imports from other States). (In boxes of 56 lb.)
1925-26	401,806
1926-27	407,608
1927-28	409,452
1928-29	410,879
1929-30	421,009
1930-31	414,244
1931-32	422,234
1932-33	449,520
1933-34	450,162
1934-35	473,067
1935-36	515,510
1936-37	535,784
1937-38	537,519
1938-39	537,915

Commonwealth Equalisation of Prices.—Co-operation between the Board and the Commonwealth Dairy Produce Equalisation Committee has continued uninterruptedly, with the result that the total wholesale value of bulk butter has been maintained at 158s. 8d. per cwt. This has been largely responsible for an average net return to factories for the year of approximately 140s. 3d. per cwt.

Yearly Returns to Factories.—Appendix 3 contains particulars of values monthly returned to factories, and also the average value for the years 1931-32 to 1938-39, both inclusive.

Administrative Expenses.—The actual administrative cost of the Board, as apart from cartage and costs involved in the cutting of the butter in Brisbane, amounted to £3,868 13s. 10d., which on the basis of the State's production for the year represents an average cost of ⅓d. per box.

Value of Industry.—It will be seen from Appendix 3, that the net value of butter produced for the year is expected to reach the immense sum of nine and three-quarter million pounds, of which upwards of seven and a-half million pounds will represent new money introduced into the State by reason of butter exported therefrom.

Local Marketing Control.—During the year the Board's operations at Hamilton have been inspected by numerous overseas and interstate visitors, representatives of State organisations, and individuals from country districts of Queensland and the metropolis, and all have commented favourably on the methods employed in the selection, patting, and handling of butter for the Brisbane market.

There is in the Board's possession also abundant evidence of the fact that the consistently high quality butter offered during the year has given widespread satisfaction.

Obituary.—The Board suffered a serious loss owing to the sudden death in March last of one of its members, Mr. R. M. Hill. Mr. Hill had been a member of the Butter Board since 1933, and for many years had served the dairying industry in other capacities, including membership of the Dairy Products Stabilisation Board. He is succeeded on the Board by Mr. C. W. Thiele. The death occurred in April last of Mr. James Reed, the Board's works manager at Hamilton.

APPENDIX 1.

STATEMENT SHOWING (IN BOXES OF 56 LB.) TOTAL MANUFACTURE, SALES, AND CONSIGNMENTS OF QUEENSLAND BUTTER, JULY, 1938, TO JUNE, 1939.

Month.	Manufacture.	Sales.					Total Overseas Exports.	Grand Total.
		Queensland.	Interstate.	East and Tinners.	Overseas S/Stores and other Countries.	Great Britain.		
1938.	Boxes.							
July	162,181	49,013	9,083	4,681	1,205	102,131	108,017	166,113
August ..	177,160	47,999	13,765	4,463	533	112,112	117,108	178,872
September ..	189,038	45,588	12,392	3,025	325	124,059	127,409	185,389
October ..	219,915	42,437	2,550	5,009	243	161,146	166,398	211,385
November ..	275,993	44,187	77	4,249	300	202,769	207,318	251,582
December ..	283,764	36,162	..	3,996	513	242,768	247,277	283,439
1939.								
January ..	217,949	41,009	9,218	4,216	535	190,102	194,853	245,080
February ..	274,363	40,451	19,432	6,235	336	165,851	172,422	232,305
March ..	305,236	44,382	11,229	6,354	662	236,875	243,891	299,502
April (*a*) ..	254,448	39,460	3,523	5,850	399	225,375	231,624	274,607
May (*a*) ..	225,239	46,017	..	6,985	327	192,257	199,569	245,586
June (*a*) ..	171,371	49,210	..	3,652	617	147,837	152,106	201,316
	2,756,657	525,915	81,269	58,715	5,995	2,103,282	2,167,992	2,775,176

(*a*) Subject to revision.

APPENDIX 2.

COMPARISON OF MANUFACTURE AND SALES OF QUEENSLAND BUTTER FOR YEARS 1925-26 TO 1938-39.

Month.	Manufacture.	Sales.					Total Overseas Exports.	Grand Total.
		Queensland.	Interstate.	East and Tinners.	Overseas S/Stores and other Countries.	Great Britain.		
	Boxes.*	Boxes.	Boxes.	Boxes.	Boxes.	Boxes.	Boxes.	Boxes.
1925–26 ..	1,074,789	399,624	51,360	19,405	2,214	608,334	629,953	1,080,937
1926–27 ..	875,552	389,698	69,411	19,807	6,684	392,611	419,102	878,211
1927–28 ..	1,240,125	376,626	60,893	35,222	4,878	764,539	804,639	1,242,158
1928–29 ..	1,320,871	400,414	110,795	32,838	4,414	765,897	803,149	1,314,358
1929–30 ..	1,358,954	420,389	84,712	33,503	4,284	805,951	843,738	1,348,839
1930–31 ..	1,658,689	393,643	36,983	30,887	3,285	1,200,691	1,234,863	1,665,489
1931–32 ..	1,697,445	399,785	7,075	41,286	2,145	1,243,950	1,287,381	1,694,241
1932–33 ..	1,785,523	427,920	7,333	53,544	3,212	1,295,035	1,351,791	1,787,044
1933–34 ..	2,212,707	425,566	9,139	68,430	4,191	1,692,142	1,764,763	2,199,468
1934–35 ..	2,325,402	463,567	47,794	78,727	4,572	1,743,040	1,826,339	2,337,700
1935–56 ..	2,008,784	505,510	104,140	70,227	4,399	1,327,371	1,401,997	2,011,647
1936–37 ..	1,507,544	516,546	51,699	30,235	2,855	882,983	916,073	1,484,318
1937–38 ..	2,052,544	525,519	108,476	48,931	5,338	1,344,844	1,399,113	2,033,108
1938–39 (*a*) ..	2,756,657	525,915	81,269	58,715	5,995	2,103,282	2,167.992	2,775,176

* Capacity 56 lb. (*a*) Subject to revision.

APPENDIX 3.

COMPARISON OF NET PRICES RETURNED TO FACTORIES ON BASIS OF EQUALISATION FIGURES, YEARS 1931-32 TO 1938-39.

Month.	1931-1932.				1932-1933.			
	Quantity Sold (Boxes). *	Total Net Value.	Net Value per Box.	Net Value per lb. (Approximate).	Quantity Sold (Boxes).	Total Net Value.	Net Value per Box.	Net Value per lb. (Approximate).
		£ s. d.	£	s. d.		£ s. d.	£	s. d.
July	106,852	365,276 13 3	3·4185291	1 2⅝	115,103	364,643 16 0	3·1679781	1 1⁴⁄₇
August	116,584	406,126 9 10	3·4835526	1 3	98,066	302,213 5 6	3·0817335	1 1⅕
September ..	105,468	350,417 12 5	3·3225019	1 2¼	91,846	266,665 3 6	2·9033945	1 0½
October ..	132,346	416,485 11 2	3·1469449	1 1½	111,271	299,637 16 0	2·6928651	0 11½
November ..	120,478	373,499 15 1	3·1001491	1 1²⁄₇	158,661	387,965 0 0	2·4452448	0 10½
December ..	189,338	573,669 7 7	3·0298693	1 1	149,088	343,180 2 10	2·301863	0 9⁶⁄₇
January ..	209,949	630,772 5 1	3·0044071	1 0⅞	156,857	346,020 2 6	2·2059592	0 9½
February ..	174,058	514,191 18 5	2·9541413	1 0⅝	237,577	481,251 0 0	2·0256633	0 8⅝
March	140,891	401,619 9 0	2·8505686	1 0¼	248,744	562,481 13 10	2·2612875	0 9⁵⁄₇
April	116,090	348,214 9 8	2·9995218	1 0⁶⁄₇	169,206	390,264 19 0	2·3064487	0 9⅞
May	158,787	483,052 15 3	3·042143	1 1	152,716	370,992 13 0	2·4292979	0 10³⁄₇
June	123,400	376,588 17 4	3·0517736	1 1	97,909	271,576 1 4	2·77376	0 11⅞
	1,694,241	£5,239,915 4 1	3·0927804	1 1¼	1,787,044	£4,386,891 13 6	2·4548314	0 10½
		1933–1934.				1934-1935.		
July	82,151	243,728 8 5	2·9668345	1 0⁵⁄₇	122,086	358,646 19 0	2·9376583	1 0⁴⁄₇
August	89,666	252,552 3 9	2·816588	1 0	114,423	331,217 10 2	2·894676	1 0³⁄₇
September ..	103,987	267,211 10 8	2·569663	0 11	140,888	373,434 4 10	2·6505753	0 11⅜
October ..	154,016	339,864 14 7	2·2066846	0 9³⁄₇	200,429	484,937 13 5	2·41949856	0 10⅜
November ..	214,133	421,993 0 3	1·9707052	0 8³⁄₇	211,616	537,835 10 5	2·54156361	0 10⅞
December ..	256,218	513,807 10 0	2·0053529	0 8⁴⁄₇	274,204	703,781 1 9	2·5666332	0 11
January ..	238,523	502,844 0 5	2·1081574	0 9	331,547	764,243 6 2	2·30508289	0 9⅞
February ..	215,022	448,691 19 0	2·0867258	0 9	275,915	662,799 14 0	2·40218801	0 10²⁄₇
March	261,770	572,046 19 5	2·1853038	0 9⅜	255,294	661,510 8 9	2·59117114	0 11⅛
April	204,270	432,788 1 6	2·118706	0 9	177,808	510,326 5 0	2·87009729	1 0²⁄₇
May	247,160	669,759 4 8	2·7098205	0 11⁴⁄₇	136,989	426,033 10 0	3·10998338	1 1⅓
June	132,552	364,783 16 1	2·7520053	0 11¾	96,501	318,569 17 8	3·3012081	1 2⅐
	2,199,468	£5,030,071 8 9	2·2869492	0 9⁹⁄₁₁	2,337,700	£6,133,336 1 2	2·6236626	0 11¼
		1935–1936.				1936–1937.		
July	95,244	319,259 18 6	3·35202139	1 2⅜	82,941	282,161 18 9	3·4019596	1 2⁴⁄₇
August	85,046	291,183 18 9	3·42384046	1 2⅝	107 108	348,645 8 6	3·25508298	1 2
September ..	104,672	335,729 18 0	3·20744711	1 1¾	104,955	340,015 12 0	3·23963221	1 1⅞
October ..	162,154	464,725 8 11	2·8659512	1 0¼	107,606	336,545 12 6	3·12757309	1 1³⁄₇
November ..	196,358	559,422 7 3	2·84899202	1 0¼	76,167	226,300 2 9	2·97110477	1 0¾
December ..	183,322	518,476 12 9	2·82822926	1 0⅛	80,375	231,967 17 1	2·88606971	1 0⅜
January ..	244,954	658,816 9 7	2·68955188	0 11½	139,228	419,196 12 3	3·01086432	1 0⅞
February ..	267,215	750,106 18 6	2·80712885	1 0	135,723	425,779 14 0	3·13712268	1 1³⁄₇
March	224,094	695,001 4 7	3·10138263	1 1¼	165,874	535,556 16 6	3·22869676	1 1⅞
April	195,284	650,826 8 5	3·33271763	1 2²⁄₇	194,213	636,509 10 0	3·27737851	1 2
May	134,008	454,764 13 9	3·3935637	1 2⁴⁄₇	155,954	530,136 16 3	3·3993153	1 2⁴⁄₇
June	119,296	404,399 19 4	3·38988717	1 2½	134,174	461,433 2 4	3·4390651	1 2¾
	2,011,647	£6,102,713 18 4	3·03369021	1 1	1,484,318	£4,774,249 2 11	3·2164598	1 1¹¹⁄₁₄
		1937–1938.				1938–1939.		
July	121,559	444,921 4 11	3·660125947	1 3¹¹⁄₁₆	166,113	613,629 17 1	3·69405075	1 3·83
August	97,476	362,786 3 10	3·72180016	1 3¹⁵⁄₁₆	178,872	649,368 14 3	3·63035418	1 3·56
September ..	97,733	363,610 8 0	3·72044652	1 3¹⁵⁄₁₆	185,389	629,580 19 1	3·39599951	1 2·55
October ..	100,522	340,464 18 3	3·386969221	1 2½	211,385	705,633 15 1	3·33814488	1 2·3
November ..	137,824	455,544 18 4	3·30526561	1 2⅙	251,582	883,285 12 10	3·51092543	1 3·04
December ..	199,080	660,000 12 10	3·3152534	1 2¼	283,439	1,004,238 7 6	3·54304939	1 3·18
January ..	226,103	777,544 12 0	3·438895554	1 2¾	245,080	869,641 7 11	3·54839805	1 3·2
February ..	249,804	899,704 15 5	3·60164281	1 3³⁄₇	232,305	816,049 19 5	3·5128386	1 3·06
March	234,887	832,857 1 7	3·54577776	1 3⅕	299,502	1,047,449 4 5	3·49730293	1 2·99
April	188,855	672,251 3 0	3·55961539	1 3¼	274,607	960,261 4 10	3·49685639	1 2·99
May	204,232	734,777 9 10	3·59775891	1 3³⁄₇	245,586	860,288 18 5	3·50300473	1 3·01
June	175,001	648,048 6 1	3·703112	1 3⅞	201,316	703,866 11 0	3·49632692	1 2·98
	2,033,076	£7,192,511 14 1	3·53774857	1 3⅙	2,775,176	9,743,294 11 10	3·510874478	1 3·05

NOTE.—As final London figures for April, May, and June, 1939, are not yet to hand, the particulars in respect of these months are estimates only.

* The capacity of a butter box is 56 lb.

CANARY SEED BOARD.

Personnel of the Board to 29th June, 1939:—Messrs. E. A. Thomas (Chairman), W. A. Ross, and the Acting Director of Marketing.

The anticipations of renewed support for the Pool, referred to in the last annual report, unfortunately were not realised. Cash offers, in excess of the Board's first advance payment, from outside operators buying for interstate delivery, proved so attractive for a large section of the growers that they were accepted without regard to the growers' ultimate economic welfare. Of recent years several factors have operated which did not facilitate a return to sound co-operative marketing practices in the canary seed growing industry. The main factor, of course, is that, because of Section 92 of the Commonwealth Constitution, the State Marketing Acts cannot extend their compulsory provisions to embrace commodities the subject of interstate trade. Another factor was that during the 1936-37 season, overseas values had firmed to the extent that by June, 1937, Argentine seed was being quoted in Australia at £50 per ton, and consequently values of canary seed were sufficiently high to enable brokers to approach the growers direct with offers of up to £47 per ton, a figure considerably in excess of the first advance which the Board could pay, as, at the time when the tariff duty on imported canary seed was increased to £16 16s. per ton in 1932, the Board had given an assurance to the Tariff Board that a maximum price of £32 10s. per ton c.i.f. main Australian ports would not be exceeded. Furthermore, speculators who were not bound to observe a maximum selling price were enabled to buy from the Board and re-sell at a profit.

In view of this position, the Board joined with the Australian Canary Seed Growers' Federation, of which it is a member, in representations to the Minister for Customs, as a result of which the maximum selling price was increased to £40 per ton c.i.f. main Australian ports in December, 1936.

1937-38 Season.—The total quantity of uncleaned seed received into the Pool amounted to 900 tons 4 cwt. 1 qr., from which 730 tons 18 cwt. 0 qr. 14 lb. of commercial seed were obtained. The waste extracted in the process of cleaning amounted to 169 tons 6 cwt. 0 qr. 14 lb., or the equivalent of 18.8 per cent. of the total. The rate of the first advance was £15 per ton, and aggregated £10,963 12s. 10d. The Pool expenditure to date amounts to £4,557 4s. 5d., made up principally of freight and cleaning charges. Practically all of the seed has now been disposed of, and it is estimated that on finalisation approximately a further £6 per ton will be paid on commercial seed.

The deliveries to the Board were less than 50 per cent. of the total Queensland crop, and they included large quantities of cracked and broken grain, and seed mixed with dirt and foreign matter, which outside operators were not obliged to buy, but which the Board, by the provisions of the Act, was compelled to accept.

With a large number of growers holding their grain for high prices from outside operators, it is evident that the Board could not finance an attractive first advance payment, as a sufficient proportion of the harvest was not in its possession for the Board to give the assurance that the crop would be placed upon the market in an orderly manner, and thus influence prices in the direction of stability. Nevertheless, over 40 per cent. of the commercial seed was disposed of at £40 per ton, the price fixed at the commencement of the season by arrangement with the Australian Canary Seed Growers' Federation. As the season progressed, however, direct sales were made by growers outside of the Pool at considerably lower prices, and the Board found it difficult to effect further sales.

In appreciation of the position, the South Australian and Victorian Canary Seed Growers' Associations (which organisations, with the Queensland Board, comprise the Federation) in December, 1938, undertook to hold their new season's seed off the market for a period of two months to assist the Board to clear the balance of old season's stocks on hand. Unfortunately, these efforts were nullified by the actions of non-supporters of the Pool, who continued to sell independently at continuously receding prices. With new season's seed from a bumper crop coming on to the market, prices finally fell to £16 a ton and lower. The Board was compelled to meet the competition with some 400 tons of commercial seed, part of which was disposed of by the newly-appointed Board. Growers who had refused direct offers of more than £30 per ton, and supported the Pool, lost heavily as a reward for their loyalty to the principle of co-operative marketing. The story is a sorry one, but it is not without its moral for the farmer who, taking the successful functioning of commodity boards for granted, endeavours to secure an individual advantage at the expense of his fellow growers.

Tariff Duties.—It was mentioned in the last annual report that the Board was giving attention to the submission of evidence before an inquiry by the Tariff Board. The Board's attitude at the inquiry may be gauged by the following extract from the Tariff Board's report on canary seed, issued September, 1938. The extract reads:—

> "The Canary Seed Board considers that it is desirable that the rates of duty vary inversely with the price of overseas seed so as to stabilise the industry, strengthen the system of orderly marketing through growers' organisations, and assist merchants by allowing them to make forward contracts for spread delivery at a fixed price, thus enabling them to fix their selling prices accordingly."

Following on the submission of the Tariff Board's report, the Federal Government amended the tariff schedule to provide that, as from the 8th December, 1938, the rate of duty on imported canary seed would remain unaltered, except that a reducing sliding scale would apply when the value for duty exceeded £14 per ton; thus making the landed cost in Australia approximately £35 a ton.

1938-39 Season.—In common with the wheat crop, the canary seed crop experienced particularly favourable conditions, with the result that a record yield, estimated at more than 3,000 tons, was garnered. As the crop neared maturity efforts were made to induce growers to support the Pool and so avoid a debacle. An appeal was made to each grower in Queensland by circular letter from the Australian Canary Seed Growers' Federation. Later, Mr. W. A. Ross, a Board member, personally canvassed growers and sought their subscription to an agreement to market their seed only through the Pool, such agreement to be effective and binding only in the event of not less than 80 per cent. of the growers being parties to it. The required percentage of adherents could not, however, be secured. Canary seed growing is largely a side line of the wheat-growing industry, and the abnormally low price of wheat had the effect of increasing the number of "weak holders" of canary seed. Finally, the position had so deteriorated that Pool supporters were forced to follow suit and seek the best price offering outside, or, alternatively, hold their seed pending a recovery of the market.

Canary seed totalling 36 tons 6 cwt. 2 qr. 10 lb. was delivered to the Board, but as it could not command finance to pay freight and other expenses on deliveries, the Board thereafter advised growers to hold their seed until further advised.

By this time all growers were acutely conscious of their position, and merchants evinced a desire to co-operate in restoring stability to the industry. In May, 1939, Mr. H. L. Ellis, chairman of the South Australian Canary Seed Growers' Association, visited Queensland at the request of the industry in South Australia, and convened meetings of canary seed growers at various centres on the Darling Downs. The time was opportune for the growers to accept a lead, and consequently a resurgence of the spirit of co-operative action took place. A growers' association was formed, and a committee appointed to proceed with the formation of a co-operative association to give effect to a system of marketing based upon the practices adopted by the industry in South Australia. The new arrangement was to differ from the old, notably in that seed cleaning operations were to be carried out at numerous local depots or on the farms by travelling plants, instead of at one central cleaning and grading establishment.

Every effort has been made by the Department to capitalise the re-awakened spirit in the ranks of the growers, in the form of an effective marketing machine, and to this end action was taken to preserve the growers' marketing board intact but quiescent, until such time as a certain antipathy to the commodity board, erroneously existing in the minds of a section of the canary seed growers, had disappeared, and they had come to a realisation that the Primary Producers' Co-operative Associations Acts, under which the proposed co-operative association was to be formed, do not provide facilities for the marketing of primary products such as are specially provided for commodity boards by the Primary Producers' Organisation and Marketing Acts.

The executive of the Association agreed with this view, and, in fact, now suggest that the Board's machinery be used to give effect to the policy laid down by the Association in order that the securing of crop finance might be facilitated. The Board is now controlled by the Association's nominees, and the ensuing twelve months will determine whether its operations can be continued.

Extension of the Pool.—In view of the uncertainty in regard to the successful functioning of a Canary Seed Pool, the Board was not brought into line with other commodity boards by granting to it a tenure of office of three years. No petition was received in request of a poll in regard to extension, and consequently the operations of the Board were extended from 1st June, 1939, to the 30th June, 1940. Mr. E. A. Thomas did not seek re-election to the Board, and as Mr. W. A. Ross was the only nomination received from the growers it devolved upon the Minister to appoint a person to the vacancy. The Canary Seed Growers' Association, on being invited to nominate a person, nominated their chairman, Mr. S. J. Gilmour, who, with Mr. Ross and the Acting Director of Marketing, were appointed members of the Board to hold office from 29th June, 1939, to 30th June, 1940; the old Board having been retained in office during the month of June. Subsequent to the first meeting of the new Board, Mr. Ross tendered his resignation, and Mr. W. Milne, nominated by the abovementioned Association, was appointed to the vacancy.

CHEESE BOARD.

Personnel of the Board to 31st December, 1941:—Messrs. D. G. O'Shea (Chairman), R. C. Duncan, T. Dare, and the Acting Director of Marketing.

The operations of the Board were extended, without opposition, for a further period of three years from 1st January, 1939, to 31st December, 1941.

Five candidates contested the election in December last of growers' representatives to the Board, the ballot resulting in the re-election of Messrs. O'Shea, Dare, and Duncan.

Production.—In the Board's report last year, it was stated that there was every reason for optimism in regard to the prospective production for 1938-39, as the season had commenced exceptionally well, and, happily, these conditions were maintained, with the result that cheese production in Queensland last year attained record proportions, the total green weight being 15,774,947 lb. The highest production figure previously attained was in 1928-29, when the quantity manufactured was 14,343,144 lb., so that the manufacture during 1938-39 exceeds the previous record by 1,431,803 lb, and this, in view of the fact that the number of suppliers to cheese factories has not varied greatly, bears striking testimony to the bounteous season which prevailed during the past twelve months.

For comparative purposes, the State's cheese production over the past five years, stated in pounds and tons, is set out hereunder:—

Year.	Lb.	Tons.
1934–35	12,177,541	5,436
1935–36	9,140,914	4,081
1936–37	7,764,930	3,466
1937–38	11,947,771	5,334
1938–39	15,774,947	7,042

Cheddar cheese again constituted the bulk of our factories' output, but small quantities of Gruyere and Roman cheese were produced during the year. The following statement shows the quantities of the different varieties of cheese manufactured during the past four years:—

Variety.	1935-36.	1936-37.	1937-38.	1938-39.
	Lb.	Lb.	Lb.	Lb.
Cheddar	9,024,157	7,678,849	11,801,893	15,648,224
Gruyere	57,784	40,309	76,225	62,416
Roman	58,973	45,772	69,653	64,307
Totals	9,140,914	7,764,930	11,947,771	15,774,947

Production in other States.—Hereunder is set out the cheese production figures over the past four years for the States which have embraced the Commonwealth Equalisation Plan, the figures for New South Wales, Victoria, South Australia and Tasmania being made available by courtesy of the Commonwealth Dairy Produce Equalisation Committee Limited:—

State.	1935-36.	1936-37.	1937-38.	1938-39.
	Lb.	Lb.	Lb.	Lb.
Queensland	9,140,914	7,764,930	11,947,771	15,774,947
New South Wales	7,055,933	7,269,514	7,582,866	7,185,726
Victoria	11,710,841	14,529,416	17,778,528	21,031,334
South Australia	8,048,440	12,243,272	15,471,831	18,362,382
Tasmania	628,093	917,581	1,267,620	1,104,350
Totals	36,584,221	42,724,713	54,048,616	63,458,739

In spite of unfavourable conditions for part of the year in Victoria and South Australia, the production in those States was again increased, and, with Queensland also recording a substantial increase in output, the Commonwealth manufacture figure was again a record, and the indications are that this trend will continue.

It would seem that the cheese industry will from now onwards occupy an increasingly important place amongst the primary producing industries of the Commonwealth.

Quality.—The classification of the cheese exported over the past four years is reflected in the following statement of percentages, as furnished by the Department of Commerce, covering all cheese, other than processed, submitted for grading in the years mentioned. In the closing months of the year the grading returns indicated a definite improvement in quality. Comparable figures of quantities graded are not available for the years other than 1938-39, as, previously, quantities were recorded by the Department of Commerce on a crate basis.

Grade.	1935-36.	1936-37.	1937-38.	1938-39.	
	Per Cent.	Per Cent.	Per Cent.	Lb.	Per Cent.
Choicest	1·41	0·21	1·13	267,326	2·68
Firsts	29·24	39·37	35·60	3,765,297	37·75
Seconds	63·02	57·65	61·29	5,559,720	55·74
Thirds	5·62	2·51	1·75	355,896	3·59
Rejects	0·71	0·26	0·23	26,660	0·24
Totals	100·00	100·00	100·00	9,974,899	100·00

Taking the Commonwealth grading figures for the cheese submitted for export, and assuming that 80 per cent. of the Queensland cheese sold within Australia was of choice or first-grade quality, and the balance second-grade, the figures for the whole output over the past two years would have been as follow:—

Grade.	1937-38.		1938-39.	
	Lb.	Per Cent.	Lb.	Per Cent.
Choicests and Firsts	6,183,103	56·26	7,946,692	53·45
Seconds	4,687,129	42·65	6,538,237	43·98
Thirds and Rejects	119,366	1·09	382,556	2·57
Totals	10,989,598	100·00	14,867,485	100·00

Disposals and Values.—Hereunder is a statement of the disposals of Queensland cheese on the various markets during the past four years:—

Year.	Local.	Process.	Overseas.	Total.
	Lb.	Lb.	Lb.	Lb.
1935–36	3,808,726	1,451,580	3,599,297	8,859,603
1936–37	3,450,637	1,751,932	1,837,845	7,040,414
1937–38	3,150,602	1,810,395	6,028,601	10,989,598
1938–39	3,138,277	1,754,309	9,581,748	14,474,334

The process figure for the year 1935-36 represents only ten months' transactions, as, prior to September, 1935, sales to processors were made at the local price and included in the local sales.

The value of these sales for equalisation purposes was as under:—

Year.	Average Equalisation Price per lb.	Value.
	d.	£ s. d.
1935–36	7·81	288,362 16 3
1936–37	8·23	241,425 15 10
1937–38 ..	8·34	383,876 2 2
1938–39 ., ..	7·94	478,643 3 11

The average equalisation prices per lb. on the different markets over the same years were as under:—

Year.	Local.	Process.	Overseas.
	d.	d.	d.
1935–36 ..	9·42	8·19	5·49
1936–37 ..	9·41	8·43	6·49
1937–38 ..	9·98	8·75	7·25
1938–39 ..	10·46	8·96	6·59

In reading the above tables it must be borne in mind that final equalisation values have not been determined at time of writing in respect of the months of May and June, 1939.

Notwithstanding the slightly lower average price last year, due to heavier exports, the return of almost 8d. per lb. must be considered satisfactory, and when regard is had to the high production figure for the year and the consequent increase in sales overseas, the results again strikingly demonstrate the value of the Commonwealth Equalisation Plan. As has been the case ever since Commonwealth equalisations began on the 1st July, 1934, there has been an almost complete absence of price fluctuations on the Australian markets; in fact, a local price of 10½d. per lb. for medium cheese operated during the whole year, whilst the only alteration in the price to processors was an increase from 8¾d. to 9d. per lb., as from the 1st August, 1938.

Shipments.—As in past years, the Board arranged shiping space on behalf of factories, and, during the twelve months under review, 59,226 crates of cheese, comprising twenty-five loadings on nineteen individual vessels, were exported to the United Kingdom market. A comparison of the shipments, in crates, over the past five years is obtained from the following statement:—

Year.	Crates.
1934-35	50,312
1935-36	22,337
1936-37	10,462
1937-38	37,787
1938-39	59,226

Regulation of Shipments.—The rapid decline in prices realised by shipments leaving Australia during the peak of the season drew marked attention to the necessity for arranging a more even spread of arrivals on the London market, and to the desirability of the adoption of a withholding scheme for cheese similar to that operating in the case of butter, and, following on representations made through the Commonwealth Dairy Produce Equalisation Committee Limited, it now seems certain that the Australian Dairy Produce Board will regulate cheese shipments during the coming season, if production is comparable with that of last year.

Consumption of Cheese within Australia.—As will be seen from the disposal figures given herein, the sales of Queensland cheese on the local and process markets were slightly lower than in previous years, and the figures for the Commonwealth were in similar proportion, the total decrease for all States within the Equalisation Scheme being 387,500 lb. Although the higher prices ruling on the local and process markets more than offset the decline in sales from the standpoint of values, and although the decline was not nearly so serious as in previous years, nevertheless the continued falling-off in the consumption of cheese within the Commonwealth must be regarded seriously, and the Board inclines to the belief that every opportunity must be taken of advertising cheese and stressing its nutritive value.

With this end in view, the Board has sought to enlist the support of the Queensland Nutrition Council and the State Advisory Board of Nutrition, whilst the Commonwealth Dairy Produce Equalisation Committee Limited has made available the sum of £100 to be spent by the Queensland Committee on some advertising medium, which will also have the backing of nutritional bodies functioning in the State.

Rail Transport of Cheese.—Following on a conference in February last, attended by representatives of the Board, the Departments of Agriculture and Railways, the Butter and Cheese Shippers' Committee, and the Queensland Cheese Manufacturers Co-operative Association Ltd., it is anticipated that insulated railway wagons without shelves may be made available during the coming summer season to all factories which are prepared to ice them.

Agents' Premises.—During the past year the Board has exerted its influence in an endeavour to have the premises of local cheese selling agents improved, and it is pleasing to be able to report that a recent inspection of these premises revealed that most of the large local selling agents have considerably improved their holding rooms, and have installed refrigerating plants. This is a very pleasing development in the process of marketing, and the Board is also endeavouring to secure a greater measure of co-operation in regard to proper storage conditions from retailers of the commodity.

Accounts and Finance.—The collections from factories during the year, for administration purposes, which amounted to £1,760 11s. 11d., as against £1,333 9s. 2d. for the previous year, exceeded the expenditure by £830 13s. 10d. After transferring the surplus to the accumulated working account, the balance thereof stands at £2,180 11s. 8d.

During the years 1935-36 and 1936-37 the amounts collected from the factories fell short of expenditure by £753 1s. 2d., but as this has been more than offset by the surpluses during the last two years, the Board at a recent meeting, after reviewing possible commitments during the coming year, decided to reduce the rate of administration levy by ½d. per cwt., as from the 1st July, 1939.

Precepts paid to the Council of Agriculture and the Dairy Cattle Improvement Board during the year under review amounted to £332 10s., whilst the other expenses totalled £618 12s. 1d. In terms of production, precept payments represented ·51d. per 100 lb. of cheese manufactured, as against 1·1d. in the previous year, whilst the other expenses worked out at ·94d. for the year under review, as against ·96d. per 100 lb. of cheese manufactured in 1937-38.

In accordance with an arrangement entered into last year, the Board and the Queensland Cheese Manufacturers' Co-operative Association Limited share the rental and telephone charges on a two-thirds and one-third basis.

COTTON BOARD.

Personnel of the Board to 31st December, 1940:—Messrs. H. R. Brake (Chairman), E. Schuenemann, J. W. Fleming, E. J. Basson, H. F. Lindenmayer, F. A. Kajewski, and the Acting Director of Marketing.

1937-38 Season.—Effort was made by the Board, in co-operation with the Department of Agriculture and Stock, to encourage the expansion of cotton-growing, with the object of meeting the Australian market requirements for raw cotton. There resulted an increase in the area planted of nearly 10,000 acres over that planted in the previous season. Altogether 65,796 acres were planted by 3,657 growers, almost half of which was located in the Callide Valley.

Unfortunately, a long, dry, hot period in February caused adverse seasonal conditions for the second year in succession, resulting in low average yields. The total production for the season amounted to 13,687,872 lb. of seed cotton, from which 9,654 bales of raw cotton were ginned, the actual yield of raw cotton being 4,773,936 lb.

The perversities of the season included humid and moist conditions at harvest time, as a result of which growers were forced to resort to the snapping method of harvesting as early as April. Snap picking meant a lowering of the grade by one or two full grades to the classification of strict low middling and low middling. Such grades are not readily acceptable to the average spinner, and consequently the rate of absorption of the crop by the spinners and the finalisation of accounts have been delayed. Additionally, the delay in making the final advance payment for the 1938 season has been contributed to by the slow clearance of cotton-seed meal from the oil mill, owing to the favourable winter conditions for livestock in Southern and Central Queensland.

Four advance payments, expressed at the following rates per lb. of raw cotton, have been paid to date to growers for the seed cotton delivered by them during the season.

	Average for all classifications of Hand-picked and Snapped Cotton Per lb. Raw Cotton.
	d.
First Advance Payment	8·639
Second Advance Payment ..	0·8
Third Advance Payment	0·988
Fourth Advance Payment ..	0·4
	10·827

A small final advance remains to be made. There is included payment to growers at the rate of £4 per ton for the cotton seed contained in their seed cotton.

The first advance payment, shown above, includes Commonwealth bounty, as prescribed by "*The Raw Cotton Bounty Act of* 1934." The bounty varies according to the grade of the cotton and to the price levels on the Liverpool market; the basic rate being 4½d. per lb., when the Liverpool price is 6d. per lb., with variations of one point up or down, for every penny rise or fall above or below 6d. in the Liverpool prices.

The Raw Cotton Bounty Act terminates at the end of 1939, and with the object of considering what assistance is to be granted the industry in future, the Tariff Board conducted an inquiry in September last.

1938-39 Season.—The area planted to cotton for the current season was reduced to 45,609 acres, due principally to seasonal difficulties at planting time. The yield also was affected by the dry conditions in late summer. Up to the 30th June last, 13,369,503 lb. of seed cotton were received at the ginneries. From this the ginneries turned out 4,673,000 lb., or 9,346 bales of raw cotton. It is not anticipated that the crop will exceed more than approximately 12,000 bales of lint, which represents only about one-third of the domestic requirements of the Commonwealth.

EGG BOARD.

Personnel of the Board to 31st December, 1941:—Messrs. T. Hallick (Chairman), J. de Vries, O. A. W. Evans, F. S. Morrison, A. C. M. Smith, and the Acting Director of Marketing.

In December last, the operations of the Board were extended, without opposition, until the 31st December, 1944.

Supplies.—The quantity of eggs handled by the Board and its agents for the twelve months ended 24th June, 1939, was 4,754,091 dozen, an increase of slightly under 5 per cent. when compared with the figures for the previous year.

The net average price (all grades included) returned to growers for eggs delivered during the twelve months ended 24th June, 1939, was 1s. 1·099d. For the previous twelve months the price was 1s. 2·055d.

Sales.—Sales within the State showed a substantial increase. There was a considerable decrease in the quantity of eggs cold stored, and a further decline in the quantity of eggs which it was found necessary to send to Southern markets. On the other hand exportation overseas increased by 11 per cent.

Export.—In the year under review packing for United Kingdom markets began almost a month earlier than in the previous year and continued till 16th December. In all, 45,753 cases, 30 dozen each, were shipped to London, Liverpool, Manchester, and Glasgow. As already stated, these figures represent an increase of 11 per cent. over the shipments of 1937-38. The total shipments from the Commonwealth to the United Kingdom during the same period declined by 9 per cent. The Board's first shipment by the "Moreton Bay" arrived at London on 8th September, when prices ranged from 13s. to 13s. 3d. per long hundred for the 15 lb. or standard pack, but, unfortunately, values were not maintained. The average gross price realised in the United Kingdom for all packs was 11s. 8·8d., as against 12s. 10·8d. per long hundred in 1937-38. In addition to lower realisation, costs of packing and transportation were slightly higher. The international situation during the export period forced war risk premiums up to as high as £5 per cent. and £3 per cent. via the Suez and Cape routes respectively. At the close of the season there was an adverse balance of £4,565 in the export account.

Reports from the United Kingdom regarding the quality of the Board's export packs again were satisfactory.

Following a conference of the United Kingdom egg trade held in London in January last, when a resolution was passed for transmission to the various Australian Governments and their representatives in London, which seriously reflected on all Australian eggs, the Board has expressed concern that something should be done to protect the good name of its pack.

All eggs exported from the Commonwealth are branded with the word "Australia." Whilst an indication of the State of shipment is marked on the cases, there is nothing on the eggs themselves to convey this information to the consumers.

At a recent meeting of the Australian Egg Producers' Council, the Board, in conjunction with the Egg Marketing Board of New South Wales, sought unsuccessfully to induce the Council to make representations to the Department of Commerce for a regulation to provide that all eggs exported from the Commonwealth be branded with the State of origin as well as the word "Australia" and the registered number of the packing floor. The proposal was meant to ensure that careful shippers who pay particular attention to the candling, grading, and packing of the product would have some protection, while in the event of quality complaints it would be possible to trace the trouble to the State of origin.

The Board is justifiably concerned in this matter of protecting the good name of Australian eggs in the markets of the United Kingdom, because export is the only means for the disposal of the large surplus production during the months of July to November, and it is vital to the poultry industry of the State, and the Commonwealth.

Reference was made in the previous report that as a result of representations by the Egg Producers' Council to the Acting Minister for Commerce in May, 1938, for a bounty or some other financial assistance in connection with the exportation of eggs the Federal Cabinet had decided to defer consideration of the matter until after the results of the export season of 1938 were known. The industry has since received notification from the Federal Department of Commerce to the effect that the request could not be granted.

Egg Board Building.—With the acquisition of its own premises, for which purpose the moneys held in general reserve fund are utilised as security, the Board took steps for the preparation of a scheme which would not only give to growers the actual *pro rata* credit of each grower in the reserve fund of £20,000, but would also make provision for the crediting to them of their percentage of further payments made as redemption to the bank of the Board's building loan. The Board's scheme was approved by the Government, and an Order in Council was issued on 3rd November, 1938, providing accordingly, and for the issue of scrip to bear interest not to exceed 2½ per cent. per annum to the growers concerned.

In addition to its being the administrative centre of the Egg Board, the Board's building, situated at the corner of Makerston street and Coronation drive, Brisbane, provides cold storage for eggs, and the necessary facilities for the handling, candling, grading, and pulping of eggs.

Egg Pulp Price Stabilisation.—The Board was a party to an agreement made in August, 1938, between the chief pulp manufacturers in the various States for the stabilisation of the price of egg pulp throughout the Commonwealth. This agreement, which was made for twelve months, expires at the end of August, 1939, but it is highly probable as the result of recent discussions that a new agreement will be made for the ensuing twelve months.

Grower Organisation.—The Board, in the performance of the added duty imposed upon it by the amending Act of 1938 providing for the organisation of egg producers, has adopted the policy of holding periodic conferences of egg producers in centres throughout its territory.

A summary of the principal marketing operations of the Board is set out hereunder:—

JULY, 1938–JUNE, 1939.

—	Dozen.	By comparison with 1937–38.	
		Increase.	Decrease.
		Per cent.	Per cent.
Quantity of eggs received at packing floors of the Board	3,505,798	7·78	..
Quantity of eggs received by Board's authorised agents	1,248,293	..	2·27
Surplus stocks transferred by agents to Board's floor	302,734	..	13·90
Eggs cold-stored	166,417	..	22·51
Eggs converted into pulp	122,918	..	43·69
Eggs exported overseas	1,372,590	11·19	..
Eggs sent to Southern markets	357,300	..	2·01

FRUIT MARKETING.

The Committee of Direction, which is the executive committee of the organisation, is formed by the election of representatives from the five sectional group committees, and a Government representative. The sectional group committees determine the policy of their respective sectional groups, and the Committee of Direction as the administrative body of the organisation, gives effect to such policy.

The personnel of the Committee (with the sectional group represented, shown in parentheses) to 31st August, 1939, is as follows:—Messrs. P. J. Savage, Chairman (Other Fruits); M. Buchanan (Banana); J. B. Ferris (Deciduous); J. H. Kidd (Other Fruits); C. H. W. Owen (Pineapple); C. Stobert (Pineapple); L. G. Swain (Citrus); and the Acting Director of Marketing.

BANANA SECTION.

Production.—The year's operations have been characterised by a rise in production, the increase coming particularly from the North Coast and Woodford centres. In spite of this increase, satisfactory prices have generally been the rule. Comparative production figures are:

1937-38	1938-39
498,386	590,496

Direction.—The Committee of Direction, at the request of the Banana Sectional Group Committee attempted, during the year, to secure a direction under which the marketing of bananas produced south of Bundaberg to the New South Wales border would be controlled. The intention of the direction was to give the Committee of Direction complete control of all bananas marketed, primarily and principally with the view to putting a stop to the practice of "direct" purchasing. Over a period of years it had been proved that this practice was to the detriment of the grower. Not only did the direct buyer on numerous occasions purchase at less than market parity, but the presence of "direct" purchases upset the market. From the organisation's point of view the worst aspect was that, with a system of direct purchasing operating, it was unable accurately to forecast the market.

Prior to the ballot, the organisation conducted a campaign of fourteen mass meetings of banana-growers in districts extending from Gympie to West Burleigh, where at the Committee of Direction's invitation representatives of the Fruit Merchants' Association were given every opportunity to state their case. The ballot resulted in a majority of 54·97 per cent. in favour of the direction. As the requisite majority of 60 per cent. was not secured, the proposal was defeated.

Banana Ripening Rooms.—The banana ripening rooms in Sydney, Brisbane, and Rockhampton have continued to render excellent service to the industry. In Brisbane, certain improvements have been effected to the rooms; and in Rockhampton it is claimed that through the operations of the rooms local banana-growers have experienced the best returns for years. An increase in the accommodation is forecast. In Melbourne, with the expiry of the lease, the organisation, through lack of response on the part of the banana merchants, has been compelled to dismantle the plant which has been installed there for the last five years. Some small reassurance is felt in the fact that portion of the rooms has been purchased by the leading banana merchant in Melbourne, and that city will not be entirely without a plant of the modern type for the ripening of bananas. With so much of the Queensland and New South Wales production of bananas being sold in Melbourne, the Committee of Direction contends it is essential for the welfare of the industry that there be some provision for correct ripening. The grower harvests his fruit when green, and is not responsible for the condition in which it is offered for sale; too often, and particularly in Melbourne, is he blamed for this, whereas the trouble is frequently traceable to faulty ripening.

Rust-affected Bananas.—The incidence of "rust" was very severe during the autumn months. The trouble is a seasonal one, and is only skin deep, making the fruit unattractive in appearance, but affecting the pulp of the banana in no way. With increasing supplies of this fruit coming on to the market an advertising campaign was entered upon, the object of the campaign being to educate consumers that the banana so marked was just as edible as the clean fruit. Because of the red, rusty appearance of the banana and the fact that the marking is ractically confined to the autumn months, a ame was coined for the affected fruit, known as Autumn Tinted'' bananas. The advertising sulted in satisfactory sales of the bananas so fected.

Pineapple Section.

The year has been marked by a heavy increase production; a record winter crop in 1938 ing followed by a record summer crop in 939, with marketing difficulties and lower ices as a consequence. Production was 44·77 er cent. in excess of that of the previous finanal year, as shown in the following comparative ures:—

1937-38	1938-39
989,737	1,432,853

Cannery.—Marketing stability is influenced the extent to which production in excess of esh fruit market requirements is absorbed by nning or processing factories. The value of the nnery outlet in assisting to market the creased pineapple production may be gleaned om the following comparative figure showing e quantities of 1½ bushel cases of pineapples sorbed by factories for the years 1935 to 939:—

NEAPPLES (1½ BUSHEL CASES) ABSORBED BY CANNERIES.

Year.	Summer.	Winter.	Total.
35	235,515	133,705	369.220
36	170,656	247,505	418,161
37	239,440	119,095	358,535
38	357,515	331,835	689,350
39	438,989	..	..

The figures indicate that the summer crop of 938 exceeded the previous record summer crop 1935) by 120,000 cases, and that the summer op of 1939 has exceeded the record of last ar by over 80,000 cases. Similarly the winter op of 1938, is, by nearly 100,000 cases, the ghest winter crop on record. Unfortunately e increased production coincided with a eriod of uncertainty on the United Kingdom arket as a result of complicated international lationships.

At the commencement of 1938 it was recognised that production would be greatly in excess any previous year, and, as a safeguard to e home market, maximum exports were aimed . The export assistance grant from the Fruit dustry Sugar Concession Committee had been educed from £10,000 to £8,000, and to supplement this grant, growers agreed to a deduction or export reserve purposes of £1 per ton from eir cannery price to be paid into a fund to uarantee canners against loss on export. At e commencement of July, with a record crop recast for the winter and the United Kingom market proving unresponsive, due mainly the protracted nature of the Anglo-American ade agreement negotiations (buyers were xpecting a reduction in the duty of Hawaiian nned pineapples and purchased only on a and-to-mouth basis), it was necessary to reduce e overseas price for canned pineapples to meet he competition of Hawaiian canned pineapple hich, even before the result of the trade negoiations had been announced, had effected a eavy reduction in price on the English market. To enable this reduction of 1s. 3d. per dozen to be made, growers agreed to a further export reserve deduction of 10s. per ton from the price of their cannery fruit. Unfortunately the international situation, which reached a crisis at the end of September, 1938, prevented the sales response that was anticipated to these attractive low prices. It was then realised that with the export market still unresponsive, and with very heavy stocks held of both the Australian and export packs, the Australian market would have to be exploited to a greater extent than previously.

Growers again rose to the demands of the moment by accepting a price reduction of £2 per ton, which with the co-operation of the canners in the shape of reduced canning margins, enabled a reduction of 1s. 3d. per dozen in the Australian price of canned pineapples from 1st August, the growers' reduction representing approximately half the amount. For some time there was no appreciable reduction in the price of canned pineapples to the consumer in any of the States. A very determined drive was then made by canners, distributors and the organisation, as a result of which wholesalers and retailers were in many instances finally induced to pass the whole, and often far more than the whole, of the price reduction on to the consumers. A notable example of this is afforded by Perth. Formerly the price was 1s. 2d. per 30 oz. tin. With the reduction, the canned fruit was offered at 10½d. per tin and even as low as 10d.

Towards the end of the year, a sale was made at a low price of the balance of the 30 oz. export pack. The announcement of this sale gave a fillip to the Australian sales, and the buying wave which followed resulted in practically the whole of the Australian packs being cleared prior to the commencement of the 1939 summer pack. The Committee was thus able to preserve its policy of starting each year with clear boards.

Prior to the summer pack, it was realised that the crop might be in excess of the absorptive capacity of the canneries, in which case allocations of factory quotas would have to be resorted to. To ensure equity, canners and the Committee of Direction co-operated, and inspectors were employed to check the estimates submitted by growers. Assistance was rendered by the Department by making available two inspectors for this work. With the full co-operation of all the canners it was not necessary to impose quotas.

Special efforts were made to move the summer pack into consumption. The experience of the previous winter had shown that an attractive price, and advertising, were the big factors in promoting sales. The price of the canned article to the public was maintained on a comparative level, and additionally the growers agreed to a contribution of 1s. 8d. per ton towards advertising. Posters, show cards, and window strips were widely distributed in Australia and New Zealand, and, additionally, an amount of £500 was contributed each by canners and growers to advertise canned pineapples. The campaign covered advertisements in weekly publications and radio programmes.

In addition to the deduction of 1s. 8d. per ton for advertising purposes, growers also agreed for the 1939 packs to a deduction of £1 per ton to create an export reserve fund. This fund will be used to supplement the export grant of the Fruit Industry Sugar Concession Committee, which for 1939 was reduced to £4,000.

Towards the end of 1939, when the overseas sale was made, the stock position was sufficiently clarified to enable a return to growers of the extra 10s. per ton deducted from July 1st. It was later found possible to make a further refund of 5s. per ton of the £1 per ton which had been collected over the whole of the year, and with the finalisation of sales of the 1938 packs a further refund of 9d. per ton was made. Of the total deductions of £1 10s. per ton for the export reserve fund, growers have thus had refunded 15s 9d. per ton. When in August, 1938, it became necessary to reduce the growers' price by £2 per ton, the Committee of Direction gave an assurance that it would afford relief to growers in all directions possible. It was promised then that if possible a rebate would be made on the cannery freight and handling margin. With the completion of the 1939 summer pack this promise has been fulfilled, and a rebate of 5s. per ton has been made to suppliers. The control of factory pineapple supplies, exercised by virtue of a direction issued by the Committee of Direction, has not only given the growers the power of collective bargaining with the factories, but it has made it possible for the growers, by co-operative action in creating an export reserve fund to equalise over all suppliers the prices paid by canners for factory pineapples for processing for the domestic and overseas markets. In practice, because of subsequent adjustments with the export canners, a uniform price level is maintained for factory pineapples, and incidentally the price levels for pineapples on the Australian fresh fruit markets thus remain undisturbed by fluctuations in the price of canned pineapples on overseas markets.

Pineapple-growers could not in this way secure the actual market value of their product without co-operating in an organised system of collective marketing. By its means also the canners have benefited because of the stability introduced into the pineapple canning industry. Unfortunately, undermining influences have been at work, because five or six breakaway growers have supplied a factory which refused to enter into the general scheme of stabilisation.

Growers' Own Cannery.—Although the ballot giving the growers' approval to the purchase of a half interest in the pineapple canning section of the business of the Victoria Cross Manufacturing Company was completed on 1st February, 1938, some delay was experienced in the finalisation of the agreement, memorandum and articles of association. The company formed to purchase the undertaking, known as Queensland Canneries Pty. Ltd., was not registered until 1st August, 1938, and all factory purchase collections at the rate of 10s. per ton made to that date were returned to growers. The 10s. per ton deductions have since been continued and with the record cannery crops in the winter of 1938 and the summer of 1939, substantial sums towards the purchase price have already been collected. The fund will commence to revolve when growers' contributions have reached a total equivalent to the cost of the shares taken to secure a half interest in the purchasing company, i.e., £35,000, plus £1 shares equivalent to half the cost of certain land adjoining the factory, the extension of the factory thereto, and the purchase and installation of certain additional plant and machinery.

During these two record crops the value of this link-up has been most convincingly demonstrated. This cannery was the last to cease operating on the winter crop, and during the summer crop ran a night shift for a period of five weeks, so that factory capacity would be at its maximum and loss to growers through quota allocations avoided.

Federal Bounty.—The great increase in production is attributable to record plantings made in 1936 and 1937 and the application of scientific principles to pineapple cultivation. The new methods of cultivation are designed to place the industry on a permanent basis, in that they embrace heavy fertilisation to enable the production of fruit continuously on the same land. Under the previous system, relatively little capital was required to produce a crop, as plantings were confined to virgin land and reasonable crops could be produced without the aid of fertiliser, sulphur, paper mulch, and the other materials which research has shown to be necessary to produce maximum crops on old land. The difficulties in the industry arise from the fact that it is going through this period of transition from one type of cultivation to another, involving more capital at a time when heavy production has resulted in lower prices. Approach has been made to the Federal Government for assistance for a limited period to give growers the opportunity to carry on during the transition period, to adopt modern methods and to firmly establish a permanent pineapple industry in districts already very closely settled.

Pineapple Distribution Scheme.—During the period of peak supplies from the summer crop a distribution scheme was undertaken by the Committee of Direction through the Woombye association. Through the co-operation of the Minister for Railways special rail concession rates were secured for this scheme for its period of operation—February, March, and April—of a flat rate of 1s. 1d. per case, irrespective of size. This freight on further request was made generally applicable to all growers. It enabled a case of pineapples to be carried any distance at a uniform charge.

The Woombye association shared the experience of all bodies undertaking such a scheme of distribution, viz., that the results are not in any way commensurate with the enormous amount of detail work involved. As a result of the scheme a total of 5,107 cases was despatched. This cannot be regarded as satisfactory. The scheme was extensively advertised, for which a grant of £200 was made by the Pineapple Sectional Group Committee on the understanding that up to £150 was to be rebated at the rate of 3d. per case on every case distributed. Advertising expenditure totalled £155.

Fresh Fruit Marketing.—Canneries closed during October, 1938, at a time when there was still a large quantity of the winter crop available. It was felt that to continue processing would merely increase the stock position to such an extent that the processing of the next summer crop would be jeopardised. The closure of the canneries resulted in glutted conditions on all markets, but this proved the only difficult marketing period during the whole of the record production of 1938-39. It was during this period of stress that the value of the Committee of Direction fruit-selling agencies was proved to the growers.

CITRUS SECTION.

Production.—The crop for 1939 is expected to be of the same extent as that for 1938.

Factory Outlet.—The prices for factory citrus were maintained at the same rate as last year, with an increase of 10s. per ton for first and second grades.

Seville Oranges.—Increased factory deliveries have been made of Lisbons and Sevilles, but deliveries of juice oranges have been under the tonnage supplied last season. At the price offered of £7, canners are insistent on fruit up to the required standard being delivered.

The schedule of factory prices for 1939 is as follows:—

	Per ton. £	s.
Citrons	12	0
Seville Oranges—		
1st Grade	11	0
2nd Grade	8	10
3rd Grade	5	0
Lisbon Lemons—		
Premium Grade	9	0
1st Grade	8	0
2nd Grade	6	0
3rd Grade	4	0
Grape Fruit	8	0
Juice Oranges	7	0

All of the abovementioned lines are subject to a factory handling charge of 5s. per ton.

Imported Grape Fruit.—Queensland citrus-growers who over the past few years have been concentrating on the production of true type grape fruit, are alarmed at the greatly increased importation of grape fruit, particularly the quantities from Palestine. They recognise, however, that without the support of the Southern citrus organisations, where the production is greatly in excess of the quantities produced in Queensland, an approach to the Federal Government for an embargo on imported grape fruit would not be successful. It is held in Southern circles that the duty is sufficiently high to act as an effective deterrent to the importation of grape fruit in such quantities as to adversely affect the marketing of the Australian product, and further that the public taste for grape fruit is being educated by the constant supply assured by importations. Queensland growers, however, believe that the lower returns for this fruit this season are attributable to the presence of the imported grape fruit on the market, and they consider that there should be at least a partial embargo during the marketing of the crop, so as to encourage the production of this fruit in quantities sufficient to meet Australia's requirements.

Citrus Stocks.—During the year the Citrus Sectional Group Committee, as an experiment, arranged through the Federal Citrus Council for the importation from California of fifteen trees of the "Robertson" Washington Navel type of orange. On arrival the trees were handed over to the Department of Agriculture for planting and propagation under the supervision of the Director of Fruit Culture.

Bonus Scheme.—The citrus section for the 1938 crop, which is marketed from April to October in each year, decided to allocate up to £400 for the payment of a bonus of 1s. per case on mandarins and lemons of approved quality consigned to the Southern capital cities; £200 was allotted to the Melbourne market, the amount being absorbed before the end of last financial year, and £200 to the Sydney market. Queensland mandarins, unfortunately, did not maintain the reputation for high quality which they had previously established on the Sydney market, and the whole of the bonus was not used. The object of the scheme was to encourage the establishment of markets in the South, with a view to relieving the Brisbane market. In the light of last season's experience, it was agreed that for the current season much more general relief would be afforded growers by a reduction in the levy on citrus fruits, and this was accordingly fixed at the rate of ½d. per case, in lieu of 1d. per case which has operated for a considerable number of years.

DECIDUOUS SECTION.

Production.—A comparison of the tonnages of Stanthorpe fruits and vegetables delivered to the various markets shows that the production for the 1938-39 season was somewhat less than that for 1937-38, as follows:—

——	1938–39.	1937–38.
	Tons.	Tons.
Brisbane—		
By Rail	6,934	12,929
Factory by Rail	714	
By Road	6,048	2,809
Rockhampton	516	718
Brisbane—Before and After Running of C.O.D. Fruit Train ..	808	595
Other Queensland Centres ..	5,882	7,819
Overseas	577	760
Sydney Markets	1,663	800
Other N.S.W. Markets	408	75
	23,550	26,505

Production was curtailed by hail damage and losses from fruit fly, the infestation this season being more serious than it has been for some years past. A conference of representative growers was held to discuss the matter with officers of the Department of Agriculture, as a result of which measures were adopted which it is hoped will lead to better control of the fly in succeeding seasons.

Road Transport.—Reference to the tonnage statistics shown above will disclose a considerable increase in the quantity of fruit and vegetables carried by road transport from Stanthorpe and district. The matter has caused serious concern to the growers' organisation. The district is dependent on rail transport for all markets other than Brisbane, and the increased patronage of the road transport obviously jeopardises the possibility of effecting further improvements in the railway service to the fruitgrowers of the district. It also disorganises the Brisbane market. Previously, when the bulk of the consignments came by rail, agents were notified by the Committee of Direction of the total quantity of the different varieties to come forward on the following day. In the light of this information and the carry-over stocks, prices were forecast for the next day's market. Under the present system no accurate information is forthcoming as to the quantities to be delivered. Instead of the total quantities for the day's market arriving at the one time, now the times of arrival vary throughout the day with the arrival of the trucks in the markets. Prices cannot be maintained, as buyers hold off knowing that later deliveries may force prices lower.

The organisation recognises the advantages that road transport affords the grower, particularly the facility of the fruit being picked up at the orchard and delivered to the agent's stand. As, however, it is not an economic proposition from the industry's viewpoint for there to be two systems of transport from the district, negotiations are in train with the Railway Department with a view to arranging a truck "feeder" service to the rail, which, as it affords to the grower the same facility as road transport, may prove a solution of the problem, and incidentally regain for the Railway Department the tonnage it has lost.

EXPORT.—(*a*) *Apples.* Export operations, so far as apples were concerned, were entirely satisfactory from the point of view of realisations. Unfortunately, adverse weather conditions resulted in the quantities committed for export not being fulfilled, both to the United Kingdom and to the Eastern markets. This made for certain difficulties in the matter of shipping space. The export of apples in comparison with the previous season is as follows:—

1938-39.	1937-38. Cases.
27,645	35,236

Of this quantity of 27,645 cases, 17,591 were despatched to the United Kingdom—almost 7,500 cases less than the export quota of 25,000 cases which had been secured, not without some effort, from the Australian Apple and Pear Board—and 9,981 cases to Eastern ports. Some of this fruit was sent by growers "on consignment," but there were purchases by the Committee of Direction to the extent of 12,038 cases. The Granny Smith was again the variety which proved the most profitable. The big bulk of the organisation's purchases were Granny Smiths, being 11,123 cases out of the total of 12,038. This fruit was purchased on two bases. Growers had the option of accepting a straight-out price of 8s. per case f.o.r. Stanthorpe, or 7s. 6d. per case with a pro rata distribution of profits, if any; 4,398 cases were booked on the latter basis, which proved the more profitable as growers received a rebate of 1s. 11½d. per case, making their price 9s. 5½d. per case, as against the 8s. accepted for the other 7,000 cases.

(*b*) *Plums.*—During the 1939 season an interesting experiment was made in the testing of the Singapore market with several shipments of plums. Valuable assistance in this connection was given by the officer of the Department of Agriculture, in the Stanthorpe district, who selected the fruit and supervised the packing. The Santa Rosa variety proved satisfactory, and there is every indication that there should be a favourable market for a limited quantity of this variety of plum in the East.

(*c*) *Pears.*—An experimental shipment of William pears, sent to an enquirer in the East, also proved quite satisfactory.

Factory.—The quantity of deciduous fruits placed with factories was 97 tons in excess of the quantity taken last season. The increase, however, was due solely to tomatoes, of which 240 tons were taken, as against only 12½ tons last season. In plums and apples, the quantities were less than for the previous season. A drop in the price of plums by the Fruit Industry Sugar Concession Committee of £1 per ton was not taken advantage of by the Brisbane canners, who accepted this fruit at the same price as last year. Acceptance of factory fruits was again on the condition that the grower had completed his census and factory estimate form by a specified date. With the early deliveries of plums some restrictions were necessary, but from 5th January unrestricted deliveries were accepted.

Hail Insurance.—Losses for the season were assessed at 29,457 bushels and 8,704 half-bushels. An interim payment was made at the rate of 1s. per bushel, and with the finalisation of receipts for the season's operations, it has been possible to make a further payment of 9d. per bushel, making the total rate of compensation payable for the season 1s. 9d. per bushel.

OTHER FRUITS SECTION.

Papaws.—Prices for both ripe and for green papaws were maintained at the same satisfactory level as last year, although it was generally recognised that for the 1939 crops a reduction might be possible. The opinion is held, and it has been so strongly substantiated in other sections of the industry, that the holding of a price at a too attractive level inevitably results in over-production. Smaller crops, however, resulted in a maintenance of price for ripe papaws.

Prices for factory papaws were discussed at two meetings of growers, the second of which was confined to growers interested in the supply of green fruit. Agreement was reached with canners for a continuance of the price of £10 10s. per ton for ripe fruit. At the second meeting the principal canner of green papaws attended to discuss both price and condition. He stated that, faced with the competition of cheaper lines such as sauce, his company was unable to pay the price of £8 10s. per ton and maintain output. Insistence on this price could only result in a restricted factory outlet. Agreement was finally reached on the basis of £7 15s. per ton delivered factory. The quantity offered proved exceptionally heavy, and it was accordingly essential to ration deliveries.

Strawberries.—A record crop was handled. Prior to the commencement of the season growers were given an assurance that there would be a factory outlet of at least 150 tons, at a price no lower than 5¼d. per lb. Excellent weather conditions during the growing of the crop ensured a very heavy yield, the total quantity placed with canners being 190 tons. This tonnage is the highest yet placed, being nearly 40 tons in excess of the previous season and 9 tons in excess of the 1929 season, when 181 tons were handled.

When cannery operations ceased on 30th September, there was still a large quantity of fruit available. The Committee of Direction organised a 4-lb. box distribution scheme, which extended over a period of three weeks. The scheme was run at a loss by the organisation, but it resulted in the placing of about five tons of strawberries at a time when no outlet other than the fresh fruit markets was available. The Department of Agriculture co-operated to secure the maximum placing of orders under this scheme. The experience gained should prove valuable if such a method of distribution is again required. Apart from the actual quantity placed, which, of course, is very small in comparison with the quantities which can be handlel by canners, the scheme proved an excellent advertisement for the strawberry-growing industry. The public bought readily from shops, and growers generally reaped the benefit through enhanced demand.

Passion Fruit.—An increased crop rendered it necessary for the price of factory passion fruit to be reduced to 2d. per lb. Even at the reduced price it was necessary to accept on a quota basis at the commencement of the crop, but later unrestricted deliveries were taken. The total quantity of fruit accepted was 6,472 bags direct from growers, and 345 cases were purchased off the market, this being in excess of the quantity taken last season.

Figs.—The fig-growers come mainly from the metropolitan districts, and each season, prior to the commencement of the crop, they meet with the Committee of Direction to discuss marketing arrangements. For the 1939 crop the growers made strenuous efforts to secure an increase in price above the 1½d. per lb. paid for the 1938 season. It was claimed that this price was not sufficient to cover the increased costs of production as a result of growers' efforts to improve the quality of their figs. As in the case of passion fruit, the position was that at an increased price only considerably lessened quantities could be taken. The growers' meeting deputed two of their number to negotiate with the main canner for an increase of ¼d. per lb., which finally they were successful in securing. The quantity of figs taken by canners was 130 tons at 1¾d., in comparison with the previous season's placements of 134 tons at 1½d. per lb.

The Sunnybank growers, where most of the figs are grown, made some attempt to achieve market stability by fixing a minimum price for figs in boxes and trays. Each grower received an undertaking from his agent that he would not sell below the fixed price.

Tomatoes.—Growers of the Redlands area, whose spring crop of tomatoes is possibly their most important crop, having in mind the satisfaction gained from having a direct representative on the Sydney market, again included this procedure in their marketing programme for the 1938 spring crop. The aim of this representative is generally to watch Queensland interests on the Sydney market, and to bring about an improvement in the growers' pack by making a direct report to him, suggesting ways in which the "get-up" of his brand can be improved. Growers realise that the most earnest efforts are necessary if they are to maintain their standing on the Sydney market against the competition from glasshouse-grown tomatoes and fruit from the Coffs Harbour district.

Last season a further marketing innovation was introduced, when the lead of the bean-growers was followed by securing from the Sydney and Newcastle trade an assurance that they would not canvass for supplies during the period October-November. This was done by agreement, the districts concerned being the tomato-growing districts south of the Brisbane River, and the representative of the growers who negotiated the agreement found the agents only too willing to co-operate with him.

BEAN SECTION.

The Bean Section is not specifically provided for as such in the Fruit Marketing Organisation Acts. Although the section is without this status it, nevertheless, has been productive in co-operative achievement.

Production of beans in Queensland continues to increase. Consignments to interstate markets, which totalled 2,042 tons, eclipsed the previous record of 1,655 tons in 1935. Despite the increased quantities available, growers had a very satisfactory season.

Conference.—The fourth annual conference of bean-growers was held in March, 1939. It was fully representative of the Queensland bean-growing districts, and was attended by representatives of the Department of Agriculture and the Banana Growers' Federation of New South Wales. The conference re-affirmed the principle of the bean agreement in regard to canvassing by agents' representatives, a marketing innovation which was pioneered by this section, and is referred to in detail elsewhere in this report.

Other items of importance considered at the conference were the fertilizer experiments, and the bean seed production scheme, both of which are conducted in conjunction with the Department of Agriculture, and will be referred to in detail in the appropriate section of the Department's annual report.

GENERAL.

FRUIT SELLING AGENCIES.

The various fruit-selling agencies conducted by the Committee of Direction of Fruit Marketing have continued to expand and to furnish proof of their efficacy in disposing of growers' fruit to the best advantage.

Sydney Section.—During the year the interstate floor for the Queensland growers has strengthened its reputation as the depot for choice Queensland tropical fruits. Of the total Queensland consignments to the Sydney market it has handled percentages as follows:—

	Per cent.
Pineapples	32·14
Bananas	21·14
Papaws	59·58
Custard Apples	60·31

The handling of such large quantities means that the section is in a position to influence the trend of prices. This was apparent during the heavy winter pineapple crop of 1938 when, owing to the closure of the canneries in the middle of October, glutted conditions were experienced on all of the fresh fruit markets. In Sydney consignments for the month of October totalled 35,643 cases, as against 13,900 cases for the same month of the previous year. Growers admit that the efforts of their own section in handling the bulk of this quantity saved the market from collapse.

During the financial year the vegetable section, which was started as part of the Sydney activities in January, 1938, became firmly established. Comparative statistics of the quantities handled on this section for six months ended 30th June, 1938 (the first period of operation), and the first six months of this year show an increase of over 50 per cent. A country order department has also been added to the activities, and each month of its existence has shown an increase in turnover on the previous month.

Over the whole of the Sydney floor the increase in turnover for the twelve months period, in comparison with the corresponding period of 1937-38, was 27.14 per cent.

With steadily increasing turnover it has been necessary to secure increased space, and fortunately it was recently possible to purchase an adjoining section to the main fruit-selling floor. The floor now covers four blocks, which will assist the salesman in displaying the growers' fruit to best advantage.

Brisbane Section.—An increase of 11.35 per cent. has been shown in the turnover of the Brisbane section in comparison with the turnover for the previous financial year. The section has maintained amongst its suppliers some of the best growers of each variety of fruit and vegetables. The Brisbane section of the organisation's fruit-selling activity is located where the majority of growers can personally visit and see for themselves the manner in which their produce is handled.

Rockhampton.—Progress has been well maintained. During the Stanthorpe season this agency is of value to the deciduous section of the industry, and again this season it has handled the greater portion of the direct consignments from Stanthorpe to that market. The percentage handled this season was 65.16 per cent., in comparison with 61 per cent. for the 1937-38 season. Turnover for the finanacial year showed an increase of 7.54 per cent. over the previous financial year.

Townsville.—As a result of approaches by Northern growers for an extension of Committee of Direction activities to the North, a branch was opened in Townsville in January, 1938. The distance of this market from the main centres of production and the lack of refrigerated transport for fruit has militated against the Committee of Direction's selling activity there proving the same satisfactory financial venture to the organisation as have the other branch activities over the last four years. It is, however, a further outlet which the deciduous growers during their short season feel that they can use with confidence, as of the total Stanthorpe tonnage sent through the Committee of Direction to Townsville 73.23 per cent. was consigned to the Committee of Direction floor for sale. The associated retail department, which has been established for just one year, has proved of assistance in the clearance of fruit, and it has probably been one of the main factors in improving the financial position of the section.

BRISBANE MARKETS.

Further effort was made by the Committee of Direction during the past financial year to have the determination of market holidays, which at the present time is the sole prerogative of the agents, placed upon a more equitable basis. Matters progressed to the stage of a ballot of the section holders in the Municipal Markets being taken on the subject of whether the markets should be kept open on Monday holidays, particularly during the hot summer months. Although a number of the largest handlers of fruit expressed agreement with the proposal, a majority of the agents, at the ballot, voted against it.

The Committee of Direction contends it should be conceded that the grower, as the one most vitally concerned, should have some say in the manner in which his produce is marketed. Growers have suffered serious losses through the closure of the markets on Monday holidays, especially in midsummer, when production of fruit is at its heaviest and when keeping conditions owing to hot humid weather are at their worst. Not only is the loss confined to the actual day itself, but its repercussions are often felt in the low prices as the result of glutted market conditions the following day. The proposals of the Committee of Direction are for the City Council to alter the agents' tenancy agreements as they fall due to provide that the matter of market holidays shall be decided by an independent committee, consisting of representatives each of the City Council, Department of Agriculture, the agents, and the growers.

COUNTRY DISTRIBUTION SCHEME.

With the commencement of the present financial year a very marked increase was shown in the monthly railings under this scheme, but the increase has not been maintained over recent months, with the result that the total for the current financial year will show little increase on the total railings for last year, viz:—

1937-38.	1938-39.	
Half-bushel Cases.		Increase.
22,808	23,463	655

In the previous year the increase over the 1936-37 railings was 13,532 cases. The total number of cases despatched since the inception of the scheme in February, 1935, to 30th June, 1939, is 79,256, an average of only 17,945 per year and 1,496 cases per month.

This scheme ensures to dwellers in far distant country places a regular supply of fresh fruit and vegetables at prices little dearer than metropolitan. Only the very best fruit and vegetables are selected, and a packing technique has been developed so that many different varieties of fruit and vegetables can be packed in the case and yet carry long distances successfully. This excellent service is not being availed of to the extent it would warrant, particularly in view of repeated statements that people in the country are unable to obtain fruit and vegetables at reasonable prices. This scheme has been widely advertised by newspaper and radio media, notably in the Cunnamulla, Longreach, and Winton districts, and through the nutrition news session from Radio Station 4BC.

Refrigerated Transport.—Efforts extending since 1937 for the provision of refrigerated transport for the far north-west districts were advanced a further stage with the provision, in January last, of a railway wagon insulated for refrigeration with "dry ice." The experimental dry ice box which had been built and used in the summer of 1938, as mentioned in my last annual report, had demonstrated that this system of refrigeration was suitable for the long distance carriage of fruit and vegetables under trying summer conditions.

The Government having agreed to the request of the Committee of Direction that the result of the initial experiments warranted trials in a specially constructed railway wagon, one was completed for its trial run on 13th February. Unfortunately, the trial run proved the only run of the season, due to misunderstanding, as to who should bear the cost of the dry ice used for the initial trip. The Railway Department has agreed, next summer, to run alternate tests with wagons fitted with dry ice and wet ice refrigeration to demonstrate the relative merits of the two methods.

Unquestionably the fruit and vegetables sent in this truck arrived in first-class order and condition, and there is reason to hope that a problem of some urgency and importance to residents of far inland districts, and particularly to workers in the silver lead mines of Mount Isa, is well on the way to a solution. It is fitting to record that the growers, through their organisation, have borne most of the experimental costs in this matter of refrigerated transport for fruit and green vegetables, and the degree of success already achieved is largely due to the faith and persistence of Mr. W. Ellison, sub-manager of the Committee of Direction of Fruit Marketing. A recent statement issued by the Queensland Nutrition Council, a body working voluntarily in the interests of the health of the community from the standpoint of a balanced diet, contained the following:—

> "The provision of refrigerated fruit and vegetables for the dwellers in North-Western Queensland is regarded as an example of the type of development urgently required in this State."

QUEENSLAND NUTRITION COUNCIL.

The Committee of Direction has allied itself with the work of the Queensland Nutrition Council, as it believes that, so far as the fruit and vegetable industries are concerned, there is every truth in the claim of the Council "that the nutrition movement is the best thing that has ever happened for the man on the land." The Council has conducted very valuable research work on the vitamin C content of Queensland fruit, and the data so furnished has proved useful for advertising purposes. For instance, as a result of this research work, it has been found that the Queensland papaw is the richest known source of vitamin C, and that other Queensland fruits are rich in this valuable vitamin.

TRANSHIPPING FACILITIES.

The Redlands tomato-growers, during the marketing of their spring crops of 1937 and 1938, had a direct representative stationed on their principal market, Sydney. Each of these representatives reported very adversely on the condition on arrival at Darling Harbour of Queensland tomatoes, attributing this in large measure to the poor facilities avilable at Clapham for transhipping fruit and vegetables from the Queensland trucks to trucks of the wider gauge of the New South Wales railways. The matter was discussed with the Commissioner for Railways early in 1938, by a deputation representative of the Committee of Direction, the Redlands tomato-growers, and the Marketing Branch of the Department of Agriculture.

After a similar report had been received in respect to the 1938 tomato season, the Redlands growers, at a mass meeting, asked the Committee of Direction to make a further approach to the Commissioner. The deputation, accordingly, was re-constituted and duly waited upon the Commissioner, when he was informed that the fruit-growers of Queensland regarded the provision at the earliest possible date of the desired transhipping facilities of such importance to their interests on the Sydney market, that the Committee of Direction would consider assisting financially if such would ensure of their early erection. It was finally decided by mutual arrangement that the Committee of Direction would loan to the Railway Department the sum of £10,000 for this purpose; the loan to carry interest and to be repaid to the Committee of Direction over a period of twenty years. The transhipping improvements to be erected will comprise one well-lighted shed 600 feet long, with one Queensland railway track and one New South Wales railway track; a platform eight feet wide to be erected in between the two sets of lines.

The segregation of agents' brands, which is one of the conditions of the loan, will result in a minimum of handling at Darling Harbour and will speed the delivery to agents' sections in the Sydney markets.

PROHIBITION OF AGENTS' CANVASSERS.

The principle of prohibiting the presence of agents' canvassers in the growers' district during the marketing of their crop was first introduced by the Gympie and Mary Valley bean-growers in 1935. This was done on a voluntary basis by agreement; growers on the one hand agreeing to consign their beans only to such agents as signed the agreement, and agents agreeing, amongst other things, not to send a canvasser into the district during certain specified periods. So satisfactorily did this agreement work that, with the further development of the export bean trade, it was considered that the problem should be tackled on an industry basis. A conference of bean-growers was held in 1936, when it was decided that similar agreements to the voluntary one of the previous year should be entered into with the Southern trade to cover all the bean-growing districts in Queensland, but as the season was somewhat advanced no action was taken that year. The following year, 1937, saw a further big development with the inclusion of the New South Wales bean-growers, and a conjoint agreement covering both Queensland and New South Wales bean districts being secured with the Sydney and Melbourne trade. This materially strengthened the position for the growers. Obviously, if there were no restriction on the New South Wales districts, an agent incurring the penalty for infringing the agreement in Queensland could be independent of Queensland supplies as he could draw these from New South Wales. In 1938 and 1939 a similar conjoint agreement was secured.

With the happy experience of the bean-growers as a guide, the Redlands tomato-growers last October decided to negotiate for a similar agreement. They found the trade very willing to meet them in this matter, and the agreement secured covered Newcastle as well as Sydney, and as a further condition it provided that the canvassing for any fruit and/or vegetables, as well as tomatoes, would be prohibited in the tomato-growing districts covered by the agreement.

The next move came from the Southern trade itself and it was one of importance to the Queensland fruit industry. Two sections of the Sydney trade suggested that an agreement should be entered into whereby the canvassing for tomatoes in the Bowen district would be prohibited during a specified period. Concurrently with this approach, inquiries were being made by the Committee of Direction in respect to the possibility of an agreement on similar lines for the Yarwun-Targinnie tomato-growers. It was then decided that if possible an agreement should be entered into to cover all the tomato-growing districts from Bundaberg northwards. Negotiations with the Bowen Fruit Export Society proved successful. A condition of acceptance of the agreement by the Sydney trade was that a similar agreement should be observed by the Brisbane trade. This was a distinct innovation to the Brisbane trade, but after a series of meetings and negotiations, when the matter was carefully explained from both the growers' and the agents' end, they favoured the acceptance of the agreement.

The position now is, therefore, that practically the whole of the year is covered by agreements against canvassing, as follows:—

Bean Agreement.—1st May to 31st October—all bean-growing districts.

Redlands Tomato Agreement.—1st October to 30th November—tomato-growing districts south of the Brisbane River.

Bowen Tomato Agreement.—15th June, 1939, to 29th February, 1940—all tomato-producing districts north of Bundaberg.

Yarwun-Targinnie Agreement.—31st August, 1939, to 29th February, 1940—covering the same districts as the Bowen Agreement.

The different dates of commencement for these last two agreements are in accordance with the maturing periods of the crops.

Under these agreements, a period is allowed immediately prior to the harvesting of the crop for the agent or merchant principals or their representatives to visit the district and contact with growers, but after a nominated date no principal or representative is permitted in the district. By this arrangement growers are spared the irritation of constant visits from agents' representatives during their busy harvesting period, the grower determines his market by his returns without the artificial urge of an agents' representative, but most important to the grower, the industry is spared the heavy financial burden of these representatives which the grower in the final analysis has to bear. This action on the part of the Queensland growers has received the commendation of the Royal Commissioner who conducted the recent inquiry into the New South Wales fruit industry. One of the recommendations of the Commissioner, after an exhaustive investigation held over a period of two years, is that growers should enter into agreements with agents for the prohibition of canvassers.

The successful operation of these agreements and the benefits accruing to the growers have led all sections of the industry to consider their possibility. The Stanthorpe district, which last season was the scene of intensive canvassing by representatives of Southern agents, has now the matter under consideration.

DIRECTION AND LEVIES.

Directions.—The following fruits have been under the control of the Committee of Direction for the year ended 30th June, 1939, by direction

Citrus fruits, for factory purposes;

Deciduous fruits, for factory purposes;

Figs, for factory purposes;

Passion fruit, for factory purposes;

Papaws, for factory purposes;

Pineapples, for factory purposes;

Strawberries, for factory purposes;

Tomatoes.—(*a*) For factory purposes;

(*b*) To stabilise the Brisbane market fo Stanthorpe-grown tomatoes by prohibiting the sale of "B" grade and smal "A" grade tomatoes from such distric when the price of "A" grade will no realise a higher gross amount than 4s. 6d per half bushel case.

Deciduous Fruit, "Other Fruits" and/o vegetables grown for market in the Stanthorp district. For transport permits for carriers i the Stanthorpe district.

Levies.—The following levies have been i operation during the year ended 30th June 1939:—

Banana Levy.—1d. for every £1 or par thereof of the gross proceeds realise from sales in Queensland of bunch bananas, and ½d. per 1½ bushel case o bananas.

Citrus Levy.—From 1st July, 1938, to 28th February, 1939, at the rate of 1d. pe bushel case or ½d. per half-bushel case from 1st March, 1939, to 30th June, 1939 at the rate of ½d. per case (irrespective of size); to be expended in the interests of the Citrus Section.

Pineapple Levy.—½d. per case on pineapples marketed as fresh fruit and 1d. per case on factory pineapples; the fund so created to be used for administrative purposes.

Stanthorpe Levy.—3s. 4d. per ton on all fruit and vegetables marketed from the Stanthorpe district; the fund so created to be used for administrative purposes.

Hail Insurance Levy.—6s. 8d. per ton on fruit only grown in the northern portion of the Granite Belt, being the contributions of the growers concerned to a Hail Insurance Fund.

Papaw Levy.—From 1st July, 1938, to 9th December, 1938, at the rate of 1d. for every *four* cases, or part thereof, the fund so created to be used for the advertising of papaws; from 10th December, 1938, to 30th June, 1939, at the rate of 1d. for every *two* cases or part thereof, half of the fund so created (with a minimum of £125 and a maximum of £175 per annum) to be used to subsidise the appointment by the Department of Agriculture of a Papaw Research Officer; the balance of the funds to be used for advertising purposes.

Tomato Levy.—½d. per case, but no levy on consignments of less than four cases; to be used for administrative purposes.

BALLOTS.

One ballot was conducted by Regulation No. 107 (*a*) under the Fruit Marketing Organisation Act on the question of the issue of a direction to control the marketing of bananas in South Queensland. The ballot was taken of those growers producing bananas in the area concerned, which was south of a line (latitude 25 degrees, south) just north of Maryborough, to the New South Wales border. It closed on 23rd March, with the following result:—

Number of Ballot-papers issued ..	2,040
Number returned unclaimed	21
Number of effective Ballot-papers ..	2,019
Number of Ballot-papers counted ..	1,090
Number disallowed	20
	1,110*

* Equals 54·97 per cent. growers voting.

For the Direction	548†
Against the Direction	428
	976
Informal	114
	1,090

† Equals 56·11 per cent.

The necessary 60 per cent. majority not being secured, no steps could be taken to issue the proposed direction.

REFUNDS MADE TO GROWERS UNDER VARIOUS SYSTEMS OF FINANCE DURING THE PERIOD TWELVE MONTHS ENDED 30TH JUNE, 1939.

Pineapple Revolving Funds.

(*a*) *Southern Consignors.*—This fund has a fixed capital of £8,000. Surpluses have accrued at such a satisfactory rate that, with payments made in November, 1938, to the Southern consignors of pineapples for the years 1935 and 1936, and with payments made on 30th June, 1939, to consignors for the years 1937 and 1938, the fund has revolved right up to date. The sum represented in the repayments to the 1935-36 consignors was £1,876 15s. 5d., and to the 1937-38 consignors £2,190 2s. 11d.

Since this fund commenced to revolve the total repayments to growers amount to £12,566 0s. 8d. The growers to participate in the benefits of this fund are those who consigned pineapples to the Southern States by the Committee of Direction fruit train specials for the years 1924 to 1938, both inclusive. This rebate of 1d. per case means that these growers have received the interstate transport and receiving services of the organisation at cost.

(*b*) *Cannery.*—(i) Cannery Purchase Fund.—From 1st February, 1938, until 30th June, of the same year, an amount of £5,133 16s. 5d. was collected at the rate of 10s. per ton, this being the contribution of the growers supplying canneries in that period towards the purchase of a half interest in the pineapple cannery section of the Victoria Cross Manufacturing Co. Pty. Ltd. The company so formed, known as Queensland Canneries Pty. Ltd., was not registered until 1st August, and for this reason the sum so collected was returned in full to the growers.

(ii) Cannery Revolving Fund.—This fund was established by the retention from the monthly payments for cannery pineapples of 6d. per case or £1 per ton. The fund revolved by the repayment of the money in the same month of the following year. With the establishment of the Cannery Purchase Fund this Cannery Reserve Fund terminated with collections on the 31st January, 1938. The following amounts were returned to growers:—

	£	*s.*	*d.*	
Winter crop, 1937	2,746	0	7	Repaid winter, 1938.
Summer crop, 1938 to 31st January	467	16	4	Repaid January, 1939.
	3,213	16	11	

Collections and repayments from this fund which operated from the winter pack of 1933, totalled £39,515 10s. 6d. In addition in January, 1934, the sum of £5,741 2s. 7d. was repaid to growers from a reserve fund which had been created in a somewhat similar manner, making the total repayments £45,256 13s. 1d.

(iii) Export Reserve Fund.—Prior to the commencement of the 1938 crop, which gave every indication of being greatly in excess of any quantity previously handled, growers agreed to the formation of an export reserve fund to supplement the grant of £8,000 received from the Fruit Industry Sugar Concession Committee. This fund was created by the retention of £1 per ton over the summer and winter packs of 1938, but owing to adverse conditions on the overseas markets due to international complications and competition from Japanese canned pineapples, it was later found necessary to increase the reserve a further 10s. per ton, which operated on cannery deliveries from 1st July. With the realisations on some of the export packs for 1938, it was first possible to refund the 10s. per ton collected from 1st July, the amount refunded to growers being £3,218 13s. 10d. It was later found possible to make a further refund of 5s. per ton of the £1 per ton which had been collected over the whole of the year, repayments to growers of this amount equalling £4,175 3s. 6d. At this stage a sum was retained in the fund to cover losses on the small balance of the pack yet to be sold. Total sales have now been effected and growers have been refunded 9d. per case, the amount so refunded totalling approximately £627. Thus of the total reserve deduction of £1 10s. per ton, growers have received a refund of 15s. 9d. per ton, the total sum involved being £8,020 17s. 4d.

(iv.) Cannery Freight and Handling Fund.—From the growers' price an amount of 30s. is retained to meet freight charges up to 6d. per case, levies, and handling costs. When in August, 1938, a reduction in the growers' price was essential a promise was given that if possible a rebate from this fund would be made to growers. On the completion of the 1939 summer pack this promise was fulfilled, an amount of approximately £2,678 being involved in a rebate to cannery suppliers at the rate of 5s. per ton.

STANTHORPE FRUIT CO-OPERATIVE HAIL INSURANCE FUND.

Growers in the northern end of the Granite Belt district contribute to this fund at the rate of 6s. 8d. per ton on fruit consignments. The Department of Agriculture also contributes £400 per annum. The scheme provides for a maximum rate of compensation at 3s. 4d. per bushel, but further provides that expenses and amount distributed must not exceed half the total of the amount of the fund at the end of the season.

For the first season of operation hail losses were comparatively light, and it was possible to pay compensation at the full rate of 3s. 4d. per bushel. For the 1937-38 season, the second year of operation, losses were very heavy, and the fund would only permit a payment at the rate of 1s. 10d. per bushel. For the 1938-39 season, losses were assessed at 33,810 bushels. An interim payment of 1s. per bushel was made and, with the finalisation of receipts for the season, it will be possible to make a further payment of 9d. per bushel to growers, making the total amount of compensation for this season 1s. 9d. per bushel.

Payments from the fund have been as follows:

	£	s.	d.
1936-37 season at 3s. 4d. per bushel	896	7	10
1937-38 season at 1s. 10d. per bushel	3,532	2	6
1938-39 season at 1s. per bushel ..	1,690	8	9
	£6,118	19	1
Plus further payment to be made for the 1938-39 season at 9d. ..	1,267	17	6
	£7,386	16	7

INTERSTATE TRANSPORT.

The consignments of fruit and vegetables forwarded by Committee of Direction fruit train specials and by steamer to the Southern markets for the twelve months ended 30th June, 1939, were as follows:—

——	By C.O.D. Fruit Train Specials.	By Steamer.	Total.
	Packages.	Packages.	Packages.
To—			
Victoria	297,998	2,284	300,282
New South Wales ..	1,124,766	5,612	1,130,378
Total ..	1,422,764	7,896	1,430,660

QUEENSLAND BANANA AND PINEAPPLE TRANSACTIONS FOR TWELVE MONTHS ENDED 30TH JUNE, 1939.

Bananas.

Southern Consignments—		
By C.O.D. Fruit Trains to—	1½ bushel cases.	
Melbourne	55,739	
Sydney	147,060	
Other Centres	14,309	
	217,108	
By New South Wales Fruit Trains, via Murwillumbah (estimated)	38,600	
Total Interstate Consignments		255,708
Queensland Sales—		
Brisbane—		
Cases	95,703	
Bunches, 368,420, equivalent to ..	98,245	
	193,948	
Cases handled direct by various Brisbane merchants (approximately)	60,840	
	254,788	
Queensland country sales (estimated)	80,000	
		334,788
Total Queensland Production (approximately)		590,496

Pineapples.

Southern Consignments—

By C.O.D. Fruit Trains to—

	1½ bushel cases.	
Melbourne	160,165	
Sydney	253,075	
Other Towns in Southern States	18,319	
Total Interstate Consignments ..		431,559
Queensland Sales (approximately) ..		230,470
Factory Consignments—		
Winter Pack, 1938	331,835	
Summer Pack, 1939	438,989	
		770,824
Total Queensland Production (approximately)		1,432,853

FACTORY ACTIVITIES FOR TWELVE MONTHS ENDED 30TH JUNE, 1939.

The following quantities of the various fruits have been handled for factory:—

STANTHORPE FRUITS.

Season—December to April—

	Direct from Growers. Tons.	Ex Market. Tons.	Tons.
Apples	149	—	
Plums	248	16	
Quinces	½	½	
Tomatoes	242	12	
	639½	28½	= 668

CITRUS FRUITS.

Season—April to October—

	Direct Tons.	Ex Market. Tons.	Tons.
Citrons	15	—	
Sevilles	84	—	
Lisbon lemons	178	4	
Grape fruit	9	—	
Sweet Oranges	90	7	
	376	11	= 387

FIGS.

	Tons.
Season—January to March	130

PAPAWS.

Season—July to June (both inclusive)—

	Direct Tons.	Ex Market. Tons.	Tons.
By weight—			
Ripe	500	—	
Green	74	—	
Cases	—	143½	
	574	143½	= 717½

PASSION FRUIT.

Season—November to January—

Direct Tons.	Ex Market. Tons.	Tons.
107	72	179

STRAWBERRIES.

	Tons.
Season—June to December	190

TOMATOES.

Season—October to December—

Direct Tons.	Ex Market. Tons.	Tons.
148	42½	= 190½

PINEAPPLES.

	Direct 1½ bushel cases.	Ex Market	
Winter crop, 1938 ..	331,835	10,408	
Summer crop, 1939 ..	438,989	4,249	
	770,824	14,657	
	= 785,481 cases.		
A case contains 56 lb. of pineapple = 40 cases the ton			19,637
Total tonnage			22,099

HONEY BOARD.

Personnel of the Board to 8th March, 1941:—Messrs. O. N. Tanner (Chairman); C. W. Edwards, H. E. Fagg, R. V. Woodrow, and the Acting Director of Marketing.

In my last Annual Report reference was made to the difficulties with which the Board had to contend because of the heavy importations, during the preceding four years, of honey from Southern States, at low prices. Although seasonal conditions in Queensland were more favourable in 1938-39, resulting in an increased honey flow, which was reflected in the quantity received by the Board, compared with the preceding twelve months, the Board was again faced with Southern competition during the year just ended. Despite this fact, prices were fairly well maintained and, in recent months, there was a noticeable increase in the quantity of honey sold by the Board's selling agent. It should be pointed out, however, that a contributing factor to this acceleration in sales was the diminution in the supplies of honey available from the South through adverse seasonal conditions in those States during the period under review.

In the year ended 30th June, 1939, the Board's selling agent disposed of 12,539 (60 lb.) tins, compared with 3,382 in the previous year. Stocks of honey on hand at 30th June, amounted to 4,387 tins, as against 4,202 at the corresponding date in 1938. The quantity of beeswax sold during the year amounted to 7,315 lb., compared with 6,095 lb. in 1937-38.

The question of the appointment of a second selling agent in Brisbane has been the subject of consideration by the Board during the year, but at the date of this report negotiations had not been finalised in this regard.

NORTHERN PIG BOARD.

Personnel of the, Board to 31st December, 1940:—Messrs. C. W. Roseblade (Chairman), D. Johnston, J. E. Foxwell, A. A. Knudson, W. J. Sloan, and the Acting Director of Marketing.

Particulars are set out hereunder showing the number of pigs and cattle handled by the Board during 1938-39. For purposes of comparison, the table also contains similar particulars in relation to 1936-37 and 1937-38:—

Sales.	1936–37.		1937–38.		1938–39.	
	Number.	lb.	Number.	lb.	Number.	lb.
Pigs—						
To North Queensland Co-operative Bacon Association Ltd.	10,984	1,202,620	10,456	1,115,421	11,676	1,252,090
To butchers (alive)	100	7,849	608	46,977	1,551	124,233
Total	11,084	1,210,469	11,064	1,162,398	13,227	1,376,323
Cattle—						
To North Queensland Co-operative Bacon Association Ltd.	220	88,323	214	81,496	97	32,868

The amount paid to growers for pigs and cattle supplied during 1938-39 was £32,470 11s. 8d., compared with £26,660 15s. 1d. and £28,359 14s. 3d. respectively, in 1936-37 and 1937-38.

As from 1st January, 1939, the purchasing of cattle on behalf of the Board was discontinued by its agents, the North Queensland Co-operative Bacon Association Ltd., owing to the establishment of a meatworks at the association's bacon factory.

Sales during the year under review amounted to £33,265 4s. 3d., of which £3,269 6s. 1d. was received from butchers on their purchase of live pigs, the remainder being for pigs handled by the association.

PEANUT BOARD.

Personnel of the Board to 27th August, 1940:—Messrs. C. F. Adermann (Chairman), L. V. Young, R. R. Nothling, J. F. Quilter, and the Acting Director of Marketing.

1936 Season.—The 1936 season's transactions were finalised in September last by a payment to growers of .3d. per lb., the amount involved being £20,416 3s. 7d. The average price realised from sales ex this particular season's intake was 2.871d. per lb., of which growers received a net average of approximately 1.88d. per lb., excluding the ¼d. lb. levy. The proceeds of sales amounted to £195,381 4s. 1d., and, excluding the levy, the total net payments to growers were £127,766 8s. 4d. The pool expenses in respect to this season's operations were £49,578 16s. 10d., equivalent to .73d. per lb.

In the general section of this report reference is made to the difficulties with which collective marketing organisations in this State have to contend through the actions of primary producers selling direct to buyers who are in competition with the various marketing organisations concerned. A typical instance of this uneconomic practice is provided by the peanut industry, which owes its uccess to the stabilising effect following the constitution of the Peanut Board in 1924, the first occasion on which peanuts could be said to have been grown in Queensland on a commercial scale. Since then the expansion of the industry has been remarkable, necessitating the erection in 1929 of central storage silos and cleaning plant at Kingaroy at a cost of £50,000, and the duplication of the plant and storage capacity at that centre in 1938. In addition, the Board has depots at Rockhampton and Atherton.

As the main market for peanuts is interstate, some growers, since the Peanut Case, have pursued the practice of direct selling, which has resulted in the reduction of the financial returns to peanut growers as a whole, because of price-cutting on the part of traders selling in opposition to the Board. The marketing of peanuts not conforming to the standards of quality maintained by the Board has also re-acted unfavourably on the industry.

Another factor has been the necessity to regulate production so that the volume of each crop will not be greatly in excess of Australian requirements; overseas export being out of the question because of competition with peanuts grown by cheap coloured labour in countries where the living standards are very low.

Some indication of the difficulties experienced by the Peanut Board can be given in respect to 1936 season, when, despite the advice of the Board to keep within certain specified limits the production of peanuts, the largest crop in the history of the industry was harvested, resulting in a surplus of the Spanish variety; the Board's supply being sufficient to meet two years' requirements of that type of peanut. This large quantity, together with the production of growers who were not supporters of the Pool, who had also overproduced, caused a glut on the market for Spanish, as a consequence of which, in addition to outside selling, prices receded to a low level. Because of the carryover, further plantings of Spanish were not warranted in 1936. In the following year, therefore, the Board felt compelled to dispose of a large quantity of the over-production of edible quality nuts at low prices for oil-expression purposes, in an endeavour to prevent the disorganisation of normal farming activities from extending into the 1937 planting season, and to ensure that fresh new season's nuts would be available to the trade from the resultant harvest.

Prior to the planting season each year the Board arrives at an estimate of the trade's annual requirements and recommends growers to plant accordingly. From 1937 season onwards, growers who support the Pool have heeded the Board's advice, but, as referred to above, non-supporters act on their own initiative.

The Board is now giving serious consideration to the disabilities under which it has to function and to possible means of overcoming them.

The Board also has under consideration, the matter of ensuring that peanuts sold for human consumption shall conform to satisfactory standards of quality.

1937 *Season.*—With the payment of a final advance of ·35d. per lb. on 29th April, 1939, the 1937 season's transactions were also finalised during the year. The amount absorbed by this payment was £13,970 14s. 3d. The realisations on the intake amounted to £139,759 17s. 2d., averaging 3·501d. per lb., and the net payments to growers, excluding the levy, totalled £92,564 15s. 11d., equal to an average of 2·318d. per lb. The 1937 season's administrative expenses were equivalent to 1·054d. per lb.

1938 *Season.*—The quantity of peanuts received by the Board during this season amounted to 7,574 tons, comprising 6,081 tons of the Virginia Bunch variety, and 1,393 tons of Spanish, Valencia, and Valroy.

The receivals at Kingaroy represented 89·1 per cent. of the total intake, deliveries to the Atherton and Rockhampton depots being 6·1 per cent. and 4·8 per cent. respectively.

To date, growers have received a first advance, the average of such payments being as follows:—

Virginia Bunch	1·381d. per lb.
Spanish Valroy Valencia	1·625d. per lb.

1939 *Season.*—Receivals to the 30th June, 1939, from the 1939 crop are as follows:—

	Tons.
Virginia Bunch	1,913·7
Spanish	1,601·8
Valroy	14·2
Total	3,529·7

It is estimated that a further 2,000 tons will have been delivered to the Board by the end of the intake season.

A first advance at the following average rates has been paid to growers on deliveries to date:—

Virginia Bunch	1·887d. per lb.
Spanish Valroy	1·625d. per lb.

The completion of the new silos at Kingaroy during the year has enabled the Board to handle the 1939 season's deliveries from growers in a more expeditious manner than was possible prior to the duplication of the storage and treatment plant at that centre.

THE NORTHERN PLYWOOD AND VENEER BOARD.

Personnel of the Board to 2nd May, 1941:—Messrs. J. F. Brett (Chairman), G. D. Gummow, C. R. Paterson, C. J. Povey, G. W. Nutting, G. A. Duffy (Chairman, Timber Advisory Committee, Forestry Sub-Department), and the Acting Director of Marketing.

During the absence abroad of the chairman, Mr. J. F. Brett, the office of chairman was filled by Mr. G. A. Duffy.

Increased manufacturing activity in North Queensland counterbalances the slowing down of production in Southern Queensland, as suitable timber supplies in the latter area are becoming scarcer.

In July, 1938, Rosenfelds Plywoods Pty. Ltd. commenced production at Cairns, and Mr. C. J. Povey was appointed to the vacancy thus created on the Board. In November, 1938, Cairns Plywoods Pty. Ltd. purchased the rotary lathes and the plywood sections of Cairns Timbers Ltd. and of Eacham Sawmills Pty. Ltd. These factories, however, continue to operate as separate units. In May, 1939, Standply Timber Co. Pty. Ltd., removed their plant from Canungra to Cardwell, North Queensland, and upon commencing production, Mr. G. W. Nutting was appointed a member of the Board.

During the year the pine plywood produced by the factories in the northern area was marketed by the Plywood and Veneer Board in accordance with arrangements made between the two Boards in December, 1937.

The deliveries for the year amounted to 8,802,905 square feet, based on the equivalent of 3/16 inch thickness, the distribution of same being as follows:—

Queensland	736,560
Interstate	8,066,345
	8,802,905

the value of same being £67,121.

Levies were paid by members voluntarily at the same rates as those determined for the Southern Board.

PLYWOOD AND VENEER BOARD.

Personnel of the Board to 2nd May, 1941:—Messrs. J. F. Brett (Chairman), R. H. Bentley, M. J. G. Brims, J. E. Christoe, R. J. Donaldson, J. W. Jackson, J. H. Hancock, H. R. Hancock, C. R. Paterson, G. A. Duffy (Chairman, Timber Advisory Committee, Forestry Sub-Department), and the Acting Director of Marketing.

Consequent upon the Standply Timber Co. Pty. Ltd. removing the base of their operations to Cardwell, North Queensland, the number of growers producing plywood was reduced to nine.

This reduction called for a corresponding reduction in the number of members of the Board, and therefore, Mr. G. W. Nutting was selected to go out of office, as from 24th May, 1939.

During Mr. Brett's absence from the State for the last five months of the financial year, Mr. R. J. Donaldson, vice-chairman, carried out the duties of chairman.

The orderly marketing of pine plywood manufactured in Queensland continues to meet with success, and, during the year under review, a similar system has been adopted by the manufacturers in the Southern States, with whom the Queensland manufacturers have co-operated, it being considered by the Board that the result of such co-operation will ensure more uniformity in marketing and also better service and quality generally. Combined efforts should result in the maintaining of an even standard of plywood manufacture.

Relations with overseas buyers have been maintained during the year, and in addition inquiries have been received from Hong Kong and Ceylon; these avenues are being investigated further.

In November, 1938, the Timber Development Association of Australia held a conference in Melbourne, at which the Board was represented by Mr. J. W. Jackson. The 1939 conference is to be held in Brisbane, and already financial assistance has been given to the project.

The Council for Scientific and Industrial Research has continued its investigations relative to plywood problems. A special experimental plant has been installed in the Council's laboratories at Melbourne, and the Board assisted by donating the sum of £250 towards its establishment. It is hoped that the solution of many plywood problems will be found as a result of experimental work conducted in this plant.

A very substantial measure of success has already attended the efforts of the Council in its search for an effective method of treating timber to prevent borer attack. The practical application of this method has been carried out under production conditions in Brisbane, with the co-operation of a local manufacturer, and it is hoped that in the near future all plywood factories will be equipped with facilities for the carrying out of the recommended treatment.

For some time past members have felt that much advantage would be gained by the reappointment of a chemist or technologist. The Forestry Department was approached in regard to the matter by the Board recently, with the result that a technological chemist is to be appointed, who will work in the Forestry Department laboratory. His salary will be provided for by the Board.

Deliveries for the year amounted to 43,966,396 square feet, based on the equivalent of 3/16 inch thickness; a decrease on the sales made last year, but this is counterbalanced by increasing sales made through the Northern Plywood and Veneer Board. The distribution of sales was as follows:—

Queensland	7,669,835
Interstate	36,215,401
Overseas	81,160
	43,966,396

the value of same being £335,243.

The administrative levy during the year was decreased to 2½d. per 100 square feet on deliveries made on the basis of 3/16 inch equivalent. The cost of administration averaged 1·02d. per 100 square feet, while bonus discount paid to, and including provision for payments due to, buyers of over 500,000 square feet per annum, absorbed 1·8d., making a total of 2·82d.

WHEAT BOARD.

Personnel of the Board to 31st August, 1941:—Messrs. W. A. Dean (Chairman), J. G. Tod, A. C. V. Bligh, W. J. Brimblecombe, T. W. McIntyre, and the Acting Director of Marketing.

As the period for which the Pool had been further constituted in 1933 was due to expire with the finalisation of the 1937-38 season's transactions, steps were taken in August, 1938, to issue a proclamation extending the life of the Pool for a further six seasons up to and including the 1943-44 season. Growers were given the right to petition for a ballot on the question of continuance or otherwise, but as no such request was received, the Pool was, therefore, automatically extended for the period in question.

In relation to the Board personnel, the term for which members were originally appointed was to have concluded on 31st August, 1938, but to permit of the Board election being held at the same time as the poll, if any, on the question of continuance, the members remained in office until the 22nd October.

Ten nominations were received in connection with the election of four growers' representatives until 31st August, 1941, the successful candidates being Messrs. Tod, Bligh, Brimblecombe, and McIntyre. Mr. W. A. Dean was appointed by the Government as chairman of the Board.

1937-38 Season.—Particulars of the quantity of wheat delivered to the 1937-38 Pool and the net payments to growers on rails loading stations are set out hereunder:—

—	Deliveries.		Percentage.	Payments.
	Bushels	Lb.		*s.* *d.*
Milling—				
Q. 1 ..	1,697,138	4	47·600	4 0⅛
Q. 2 ..	1,109,732	40	31·126	3 10⅞ to 3 9⅛
Q. 2A ..	488,203	9	13·692	3 8⅞ to 3 7⅛
	3,295,073	53	92·418	
Feed—				
F. 1A ..	54,313	19	1,524	3 3⅛
F. 1 ..	173,508	44	4·866	3 0⅛
F. 2 ..	42,487	47	1·192	2 9⅛
	3,565,383	43	100·000	

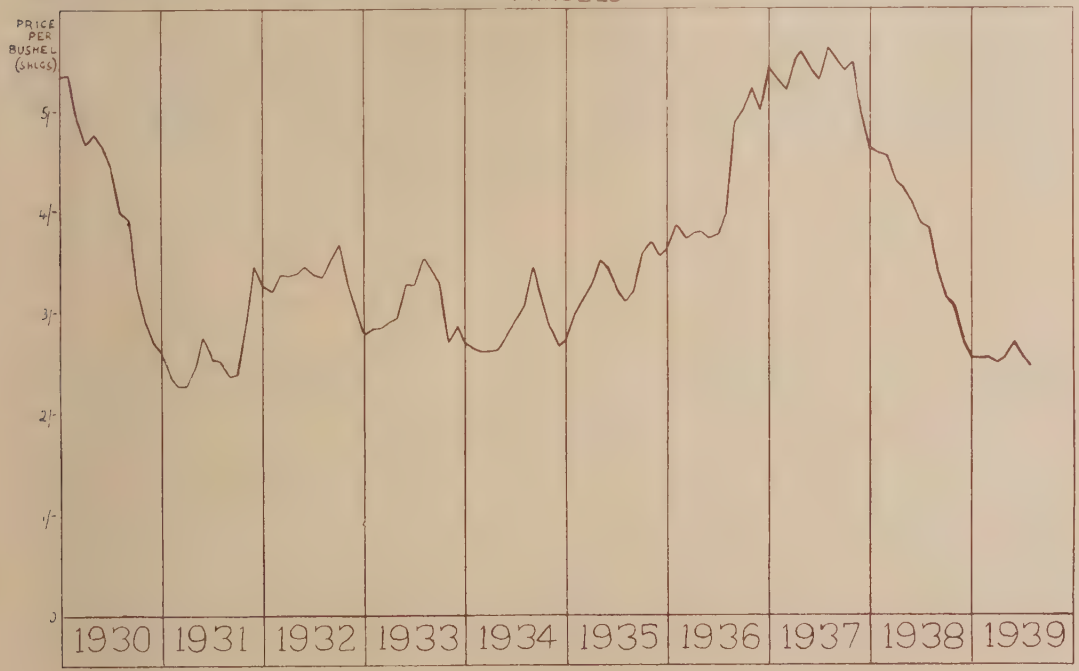
The weight loss amounted to 31,980 bushels 25 lb. (·9 per cent.) and the Pool expenditure £53,320 12s. 7d. (3·589d. per bushel). An amount of £38,706 16s. 1d. was paid to growers by way of hail insurance compensation.

1938-39 Season.—The recovery of wheat prices during the 1936-37 and 1937-38 seasons (which coincided with short crops in North America) encouraged expansion of wheatgrowing in Queensland, particularly in parts of the wheat belt where new farms were being developed. The area sown to wheat in 1938 increased, it is estimated, to more than 400,000 acres, as compared with 373,000 acres for the previous year. The crops encountered abnormally favourable conditions during the growing season, and with few exceptions they escaped harvest-time hazards. The net result of the operation of such a set of favourable factors was the establishment of Queensland records for total production and production per acre. These figures have been estimated at approximately 8,448,000 bushels of seasonal yield, as compared with an average annual production of 3,500,000 bushels over the ten-year period ended 1938, and an average yield per acre of approximately 20 bushels, as compared with 13·8 bushels as the mean of the averages over the past ten seasons.

Unfortunately, the production of a bumper crop containing some 3,000,000 bushels surplus to domestic requirements coincided with a serious deterioration of the world wheat market. Prices at Darling Harbour, Sydney (which had reached a peak of 5s. 10d. per bushel in April, 1937), had slumped, at the commencement of the season, to 2s. 7d. per bushel. Since that time the trend has been steadily downward.

The following graph showing wheat prices at Darling Harbour, Sydney, on which prices of Queensland wheat are based, illustrates the trend of wheat prices since the first downward plunge with the onset of the economic depression in 1930. With the operation of the policy of high protection of the wheatgrowing industries of European countries, the increasing capacity of the world to produce wheat, and the declining per capita consumption of that commodity, the high point reached by the curve of the world's free market wheat prices in 1936 and 1937 can only be taken to indicate a period of abnormality.

WHEAT PRICES—DARLING HARBOUR, SYDNEY.
MONTHLY AVERAGES OF PRESS QUOTATIONS FOR BAGGED MILLERS' PARCELS



Consequent upon the introduction, in December, 1938, of an Australian Wheat Stabilisation Plan, based upon Commonwealth and State legislation, providing for the imposition of a sales tax on flour and the distribution of the proceeds to wheatgrowers, it became necessary for the Board to arrange a new "price formula" with the Queensland millers. Some difficulty was experienced in reaching agreement. Several conferences, at which the Flour Prices Committee set up under *"The Wheat Stabilisation Act of 1938"* assisted the parties, were held in Brisbane and Toowoomba, extending over a period of five months. During the course of their deliberations the parties placed their respective viewpoints before the Hon. the Premier and the Hon. the Minister for Agriculture, and finally the matter was submitted to arbitration at the end of April, 1939. The arbitrator, Mr. T. A. Ferry, of the Industrial

Court, decided the point in dispute—namely, the payment of freight on the wheat from country station to mill siding, by requiring the Board to pay 2½d. of it. This determination virtually meant an equal sharing of the freight by both parties. Previously freight had been paid by the millers. The other features of the previous agreement have been retained, including the payment at growers' station (subject to the arrangement in regard to the sharing of freight) for Q2 wheat of a price 1½d. per bushel above quotations for parcels on sellers' values for bagged wheat in trucks at Darling Harbour, Sydney. A premium of 1½d. per bushel shall be added for Q1 wheat, and a dockage of 1½d. per bushel shall be allowed for Q2A wheat. The system of rebates to the mills, has been extended to include special rebates on wheat used in the gristing of flour sold in certain parts of the State.

The intake into the Pool as at 30th June, 1939, totalled 7,965,216 bushels, nearly all of which has been classified as milling wheat. The previous record harvest handled by the Board was 4,550,025 bushels in 1930-31.

Export.—To the end of June wheat exported overseas amounted to 2,154,160 bushels. Some further shipping space has been secured, but with the abnormally low prices ruling overseas, the Board now has decided to explore the local market more fully with a view to increasing domestic sales, which will return a better price. The decision is timely, as for the six months ended 30th June, 1939, during which period large quantities of Queensland-grown wheat were being exported overseas at exceedingly low prices, at least 205,670 bushels of wheat were imported into Queensland from New South Wales, comprising 82,580 bushels of wheat for local flour mills, and some 123,000 bushels of wheat of milling quality imported for feeding to poultry.

Although this is the first occasion that production has exceeded Queensland's consumptive needs, and a resort to large-scale export has not previously been necessary, Queensland wheat has, on occasion, been sold overseas, the greatest quantity in any one season being 569,410 bushels from the 1924-25 harvest.

Expenses.—With the large crop it has been found possible to reduce expenses, which it is estimated will amount to 2½d. per bushel—the lowest rate since the inception of the Pool, notwithstanding the fact that the large yield necessitated the establishment of dumps at a number of additional depots.

Advances to Growers.—The Board obtained crop finance in relation to wheat of the 1938-39 season from the Rural Credits Branch, Commonwealth Bank of Australia, and first and second advances of 1s. 3d. and 3d. per bushel respectively, with relative dockages according to quality, have been paid to date on deliveries to the Pool.

In addition growers have received an advance at the rate of 2d. per bushel from the Commonwealth bounty on wheat delivered by them to the Pool.

1939-40 Crop Prospects.—Ideal seasonal conditions have been experienced. Planting rains favoured a good germination of the seed, opportune frosts provided the necessary check to prevent the crops running prematurely into head, and copious late winter rains have ensured of good spring growth. The area sown to wheat, it is anticipated, will show a decline on that of the previous year.

Market prospects, however, are far from satisfactory. The International Institute of Agriculture has reported increased production, with the result that stocks of wheat practically equivalent to a year's world demand will be carried over to the year 1940-41.

GENERAL.

Following upon the regrettable illness and death of Mr. R. Wilson, who held the dual position of Acting Under Secretary of the Department and Acting Director of Marketing, I was appointed to the position of Acting Director of Marketing on 16th February, 1939.

The re-organisation of the Queensland Producers' Association, which was foreshadowed in the last Annual Report, was effected during the year under review. By "*The Primary Producers' Organisation and Marketing Acts Amendment Act of* 1938," the old Council of Agriculture and its allied Local Producers' Associations were abolished, and a new Council of Agriculture, organised on a commodity basis, was constituted. In addition to the various Boards represented on the old Council, membership of the new Council has been granted to "The Brisbane Milk Board," recently constituted under "*The Milk Supply Act of* 1938."

The amending Act above referred to has imposed additional duties and functions on Boards appointed with respect to commodities, including their being concerned with the preservation, expansion, and economic well-being of the industries they respectively represent. The Board now is the medium of communication between the Government, or the Council of Agriculture, and all persons engaged in or associated with its particular industry. A Board is required to take cognizance of all agricultural and marketing problems arising out of or associated with its particular industry, and may, after consideration of any such problem, refer the same to the Council of Agriculture. In like manner the functions of the Council of Agriculture have been broadened in conformity with the conception of its status as the central organisation representative of all Boards.

The question of instituting a scheme of premium payments to be made to cattle-growers for cattle hides showing a minimum of damage as a result of fire branding was given further attention during the year. As a result of a conference, convened at the direction of the Hon. the Minister (Mr. F. W. Bulcock), between representatives of the Marketing Branch of the

Department, the Queensland Meat Industry Board, the United Graziers' Association, the Selectors' Assocation, and the Master Tanners' Association, the latter body has referred to its Federal executive the matter of drawing up a list of grades for fire-branded hides and a schedule of the premiums which the tanners would be prepared to pay for cleanskin hides, or hides suitably branded from the tanners' point of view.

Legislation of a marketing character passed during the last session of Parliament included "*The Wheat Stabilisation Act of* 1938," a uniform measure passed by all States, concurrent with the 1938 wheat industry assistance legislation of the Commonwealth Parliament, the whole constituting an Australian Wheat Stabilisation Plan, providing, by means of a sales tax on flour, for the payment to Australian wheat-growers for that portion of the crop consumed as flour in Australia, of a price equivalent to 5s. 2d. per bushel, free on rails, Williamstown.

The Flour Price Committee provided for in the Act was constituted by the appointment thereto of the Director of the Bureau of Industry, the Commissioner of Prices, and myself.

The Committee declared a minimum price for wheaten flour of £11 per ton delivered at the place of manufacture. Maximum prices are subject to the provisions of "*The Profiteering Prevention Act of* 1920." Flour prices in Brisbane were increased on the imposition of the tax on 5th December, 1938, from £8 15s. per ton, to £12 10s. per ton. On the 10th December they were raised to £12 15s. per ton, on the 7th January last, they were reduced to £12 12s 6d. per ton.

When the plan was put into operation, bread prices in Brisbane were increased from 5d. to 5½d. a 2 lb. loaf.

The sales tax on flour, as imposed under the Commonwealth Act, has shown the following variations, viz.:—

£	*s.*	*d.*	
5	15	0	a ton as from 5th December, 1938
5	7	6	a ton as from 16th December, 1938
5	17	6	a ton as from 14th March, 1939
5	5	0	a ton as from 27th April, 1939
5	0	0	a ton as from 19th May, 1939
5	10	0	a ton as from 16th June, 1939

In making comment upon the experiences of the past year in the field of collective marketing of primary products, the matter of most importance is, without doubt, the increasing danger to the welfare of marketing schemes due to disloyalty on the part of sections of the growers of different commodities to the pooling principle. In the various sections of this report, notably those relating to canary seed and peanuts, there is evidence of the ability of Commodity Boards to secure the best return for the growers being impaired by the action of a small number of advantage seekers in the ranks of the growers, in making sales direct to buyers at prices lower than those asked by the Commodity Board.

Since the failure of the marketing referendum, the position has steadily deteriorated in respect particularly to commodities which may be sold interstate without first being processed. Fortunately this does not apply to the more important Boards operating in respect to processed commodities, where the decision in such matters is in the hands of men of marketing experience and business acumen. Nevertheless, this weakness in a marketing structure which has proved its value in assisting to correct the univarsally prevailing economic mal-adjustment between primary industries on the one hand, and other industries and services on the other, is a menace to the welfare of that section of the community engaged in agriculture, which cannot lightly be disregarded by a country, the whole economy of which is based upon primary production.

H. S. HUNTER,
Acting Director of Marketing.

REPORT OF THE REGISTRAR OF PRIMARY PRODUCERS' CO-OPERATIVE ASSOCIATIONS.

"The Primary Producers' Co-operative Associations Acts, **1923** *to* **1934."**

Sir,—In accordance with Rule 53 of Part II. of the Schedule to the abovenamed Acts, I have the honour to submit, for transmission to the Governor in Council, my report for the year ended 30th June, 1939.

The associations and federations registered under the Acts to 30th June, 1939, are listed below:—

Bacon Associations.—Having a capital divided into shares with limited liability	4
Barley Association.—Having a capital divided into shares with limited liability	1
Canning, Jam, and Preserving Association.—Having a capital divided into shares with limited liability	1
Carrying Association.—Having a capital divided into shares with limited liability	1
Chicken Hatchery Association.—Having a capital divided into shares with limited liability	1
Cold Storage Federation.—Having a capital divided into shares with limited liability	1
Cotton Association.—Having a capital divided into shares with limited liability	1
Dairy, Butter, and Cheese Associations.—	
Having a capital divided into shares with limited liability	57
Without share capital, with liability limited to the assets of the Association	5
Dairy Produce Marketing Federation.—Having a capital divided into shares with limited liability	1
Dip Associations.—Having a capital divided into shares with limited liability	34
Egg Producers' Association.—Without share capital, with liability limited to the assets of the Association	1
Farmers' Association.—With capital divided into shares with limited liability	1
Farmers' Association.—Without share capital, with liability limited to the assets of the Association	1
Farmers' Distributing Association.—Having a capital divided into shares with limited liability	1
Fat Pig Selling Association.—Without share capital, with liability limited to the assets of the Association	1
Flour Milling Associations.—Having a capital divided into shares with limited liability	2
Fruitgrowers' Associations.—	
Having a capital divided into shares with limited liability	8
Without share capital, with liability limited to the assets of the Association	56
Fur Farming Association.—Having a capital divided into shares with limited liability	1
Meat and Bacon Association.—Having a capital divided into shares with limited liability	1
Packing Associations.—Having a capital divided into shares with limited liability	3
Pea Marketing Association.—Without share capital, with liability limited to the assets of the Association	1
Peanut Growers' Associations.—Having a capital divided into shares with limited liability	2
Producers' Associations.—Having a capital divided into shares with limited liability	5
Publication Association.—Having a capital divided into shares with limited liability	1
Stock and Produce Associations.—Having a capital divided into shares with limited liability	3
Stores Association.—Having a capital divided into shares with limited liability	1
Sugar Associations.—	
Having a capital divided into shares with limited liability	1
Without share capital, with liability limited to the assets of the Association	8
Tobacco Growers' Associations.—	
Having a capital divided into shares with limited liability	2
Without share capital, with liability limited to the assets of the Association	4
Associations without share capital with unlimited liability	Nil
	211

Since the Acts have been in operation, four associations have amalgamated with others and fifteen have wound up voluntarily, leaving a total of 190 associations and two federations on the register.

During the year, several associations have amended their rules to meet changing circumstances.

The number of licensed auditors has increased by twelve, bringing the total to 220.

No further exemptions from the provisions of the Acts have been granted during the year, the total remaining at 28.

A. J. EVERIST,

Registrar of Primary Producers'
Co-operative Associations.

By Authority: Thomas Gilbert Hope, Acting Government Printer, Brisbane.

Price, 3*s.* 6*d.*]

1939.

QUEENSLAND

ANNUAL REPORT

OF THE

GOVERNMENT STATISTICIAN

ON

Live Stock and Pastoral Production

FOR

THE YEAR 1938

BRISBANE:
By Authority: ARTHUR HENRY TUCKER, Government Printer.

1939.

QUEENSLAND.

Report of the Government Statistician on Live Stock and Pastoral Production for the Year 1938.

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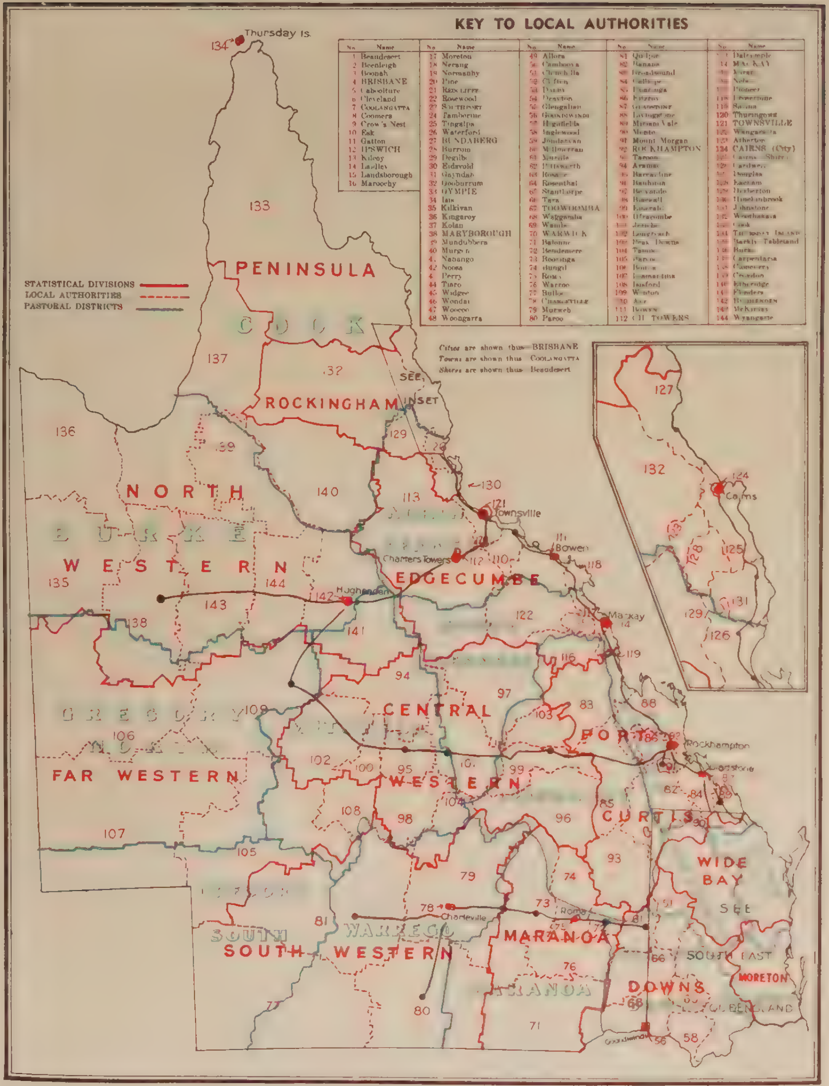
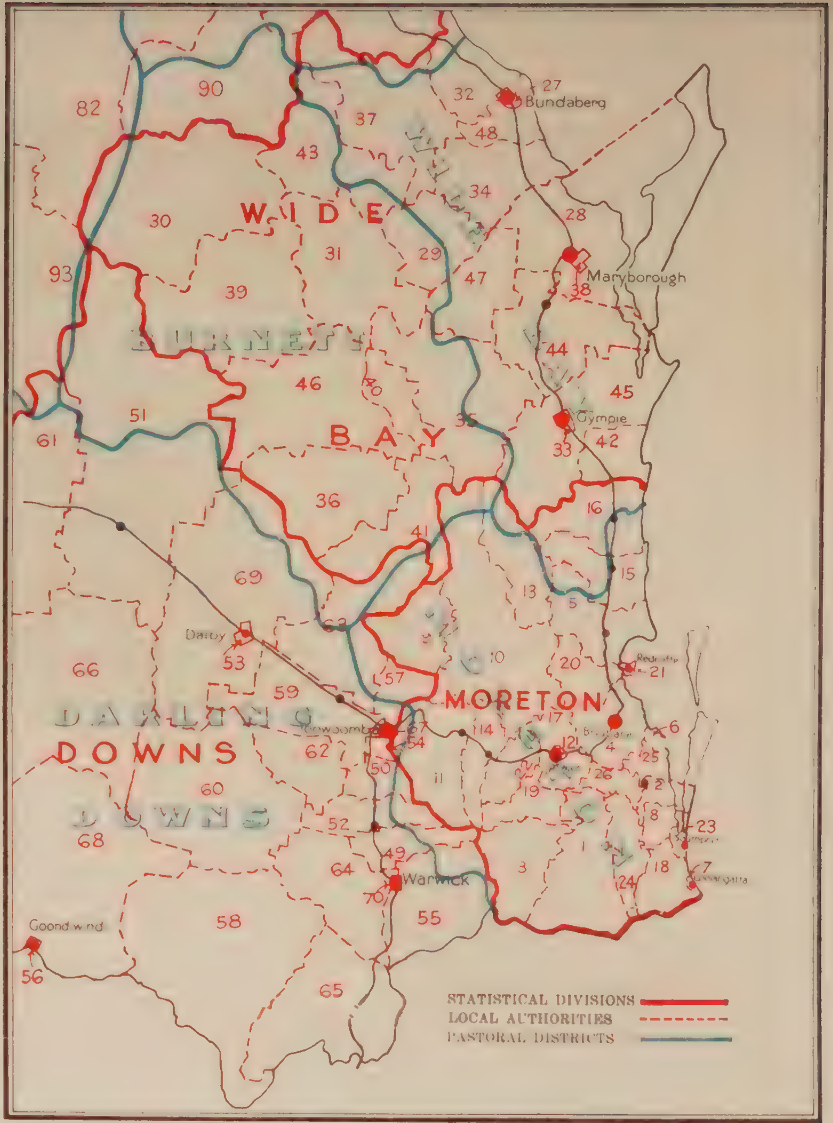
QUEENSLAND


Thursday Is.
PENINSULA
COOK
ROCKINGHAM
SEE INSET
NORTH WESTERN
BURKE
EDGECUMBE
Townsville
Bowen
Charters Towers
Hughenden
Mackay
Cairns
CENTRAL
GREGORY
FAR WESTERN
WESTERN
PORT CURTIS
Rockhampton
Gladstone
WIDE BAY
SEE
SOUTH EAST
MORETON
WARREGO
SOUTH WESTERN
MARANOA
Charleville
Roma
DOWNS
Goondiwindi
STATISTICAL DIVISIONS
LOCAL AUTHORITIES
PASTORAL DISTRICTS

KEY TO LOCAL AUTHORITIES

No.	Name	No.	Name	No.	Name	No.	Name	No.	Name
1	Beaudesert	17	Moreton	49	Allora	81	Quilpie	113	Dalrymple
2	Beenleigh	18	Nerang	50	Cambooya	82	Banana	114	MACKAY
3	Boonah	19	Normanby	51	Chinchilla	83	Broadsound	115	Mirani
4	BRISBANE	20	Pine	52	Clifton	84	Calliope	116	Nebo
5	Caboolture	21	Redcliffe	53	Dalby	85	Duaringa	117	Pioneer
6	Cleveland	22	Rosewood	54	Drayton	86	Fitzroy	118	Proserpine
7	Coolangatta	23	Southport	55	Glengallan	87	Gladstone	119	Sarina
8	Coomera	24	Tamborine	56	Goondiwindi	88	Livingstone	120	Thuringowa
9	Crow's Nest	25	Tingalpa	57	Highfields	89	Miriam Vale	121	TOWNSVILLE
10	Esk	26	Waterford	58	Inglewood	90	Monto	122	Wangaratta
11	Gatton	27	BUNDABERG	59	Jondaryan	91	Mount Morgan	123	Atherton
12	IPSWICH	28	Burrum	60	Millmerran	92	ROCKHAMPTON	124	CAIRNS (City)
13	Kilcoy	29	Degilbo	61	Murilla	93	Taroom	125	Cairns (Shire)
14	Laidley	30	Eidsvold	62	Pittsworth	94	Aramac	126	Cardwell
15	Landsborough	31	Gayndah	63	Rosalie	95	Barcaldine	127	Douglas
16	Maroochy	32	Gooburrum	64	Rosenthal	96	Bauhinia	128	Eacham
		33	GYMPIE	65	Stanthorpe	97	Belyando	129	Herberton
		34	Isis	66	Tara	98	Blackall	130	Hinchinbrook
		35	Kilkivan	67	TOOWOOMBA	99	Emerald	131	Johnstone
		36	Kingaroy	68	Waggamba	100	Ilfracombe	132	Woothakata
		37	Kolan	69	Wambo	101	Jericho	133	Cook
		38	MARYBOROUGH	70	WARWICK	102	Longreach	134	Thursday Island
		39	Mundubbera	71	Balonne	103	Peak Downs	135	Barkly Tableland
		40	Murgon	72	Bendemere	104	Tambo	136	Burke
		41	Nanango	73	Booringa	105	Barcoo	137	Carpentaria
		42	Noosa	74	Bungil	106	Boulia	138	Cloncurry
		43	Perry	75	Roma	107	Diamantina	139	Croydon
		44	Tiaro	76	Warroo	108	Isisford	140	Etheridge
		45	Widgee	77	Bulloo	109	Winton	141	Flinders
		46	Wondai	78	Charleville	110	Ayr	142	HUGHENDEN
		47	Woocoo	79	Murweh	111	Bowen	143	McKinlay
		48	Woongarra	80	Paroo	112	CH. TOWERS	144	Wyangarie

Cities are shown thus BRISBANE
Towns are shown thus Coolangatta
Shires are shown thus Beaudesert


Bundaberg
Maryborough
Gympie
WIDE BAY
BURNETT
Dalby
Toowoomba
Warwick
Goondiwindi
Redcliffe
Brisbane
MORETON
DARLING DOWNS
DOWNS
STATISTICAL DIVISIONS
LOCAL AUTHORITIES
PASTORAL DISTRICTS

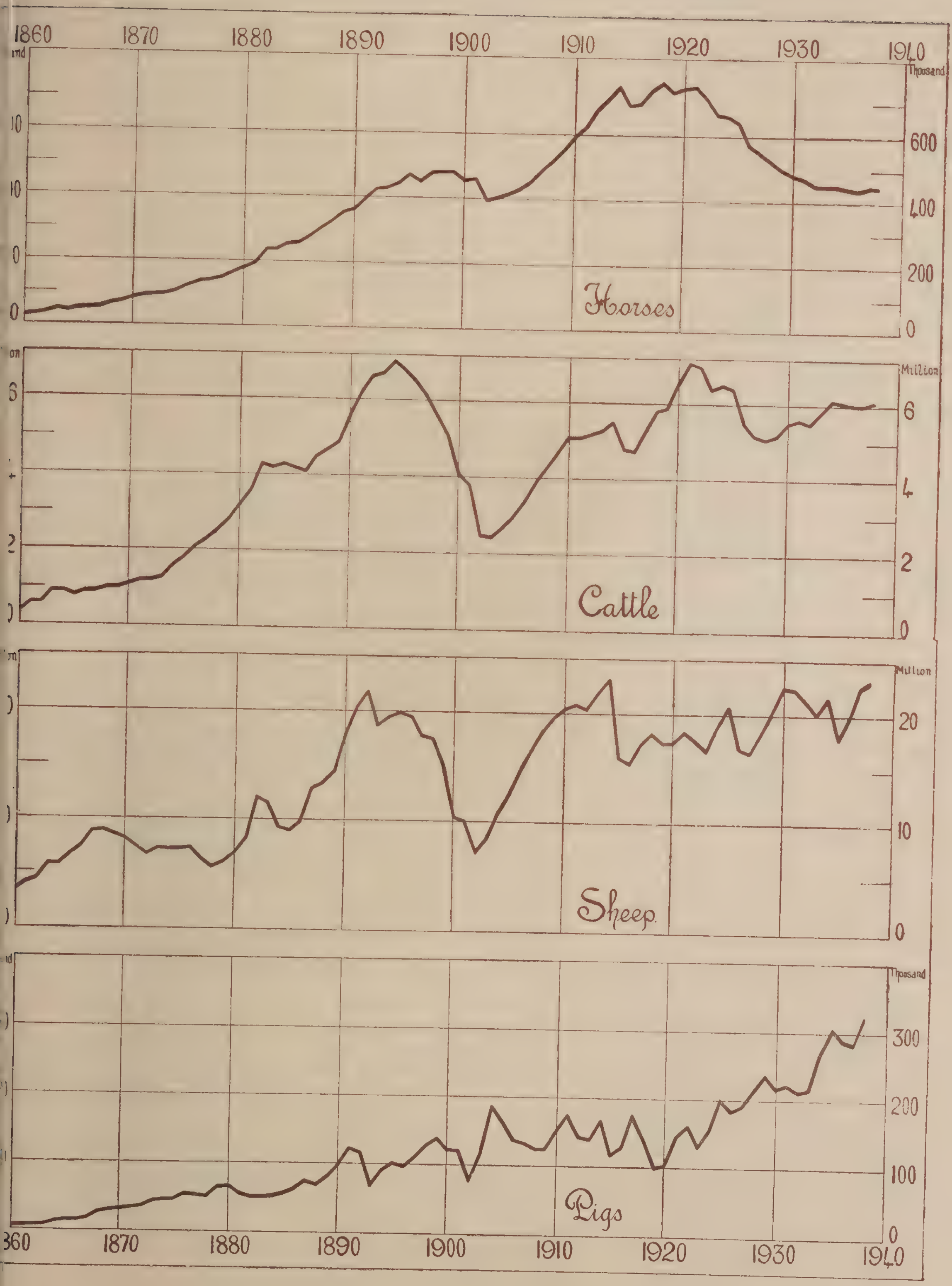

1860
1870
1880
1890
1900
1910
1920
1930
1940
Thousand
600
400
200
0
Horses
Million
6
4
2
0
Cattle
Million
20
10
0
Sheep
Thousand
300
200
100
0
Pigs

Table No. 1.

LIVE STOCK NUMBERS AT 31ST DECEMBER—QUEENSLAND—1929–1938

Year.	HORSES.			Donkeys and Mules.	CATTLE.			SHEEP.								Pigs.
											BREEDS.					
	Entire.	Other.	Total		Dairy.	Other.	Total.	Under 1 year.	1 year and Over.	Total.	Merino.	Other Pure Breeds.	Merino Comeback.	Crossbreed.	Unspecified.	
1929	1,700	497,402	499,102	1,002	*n*	*n*	5,208,588	3,945,077	16,379,226	20,324,303	20,058,032	13,601	137,730	*a*	114,940	236,037
1930	1,805	479,165	480,970	645	*n*	*n*	5,463,724	5,180,671	17,361,372	22,542,043	22,265,062	19,976	164,569	*a*	92,436	217,528
1931	2,221	466,382	468,603	871	*n*	*n*	5,550,399	4,508,961	17,815,317	22,324,278	22,107,970	17,677	103,257	*a*	95,374	222,686
1932	2,147	449,497	451,644	842	*n*	*n*	5,535,065	3,684,690	17,628,175	21,312,865	21,109,518	19,137	93,476	*a*	90,734	213,249
1933	2,389	446,529	448,918	1,106	*n*	*n*	5,781,170	2,891,894	17,180,910	20,072,804	19,887,477	24,353	77,992	*a*	82,982	217,448
1934	2,358	445,446	447,804	800	*n*	*n*	6,052,641	4,500,139	17,074,043	21,574,182	21,348,048	27,968	102,147	*a*	96,019	269,873
1935	2,534	438,541	441,075	838	*n*	*n*	6,033,004	1,805,715	16,254,378	18,060,093	17,863,946	24,757	89,138	*a*	82,252	304,888
1936	2,741	437,827	440,568	968	*n*	*n*	5,950,572	4,403,795	15,607,954	20,011,749	19,713,202	27,220	82,244	76,281	112,802	290,855
1937	3,048	442,868	445,916	861	1,014,182	4,944,983	5,959,165	4,342,636	18,155,334	22,497,970	22,121,647	31,444	94,442	171,190	79,247	282,941
1938	2,937	441,584	444,521	775	1,074,712	5,022,377	6,097,089	3,757,355	19,401,214	23,158,569	22,768,009	43,840	126,778	135,309	84,633	325,326

n Not available.

a Numbers not collected separately, but included in Unspecified.

Table No. 2.

LIVE STOCK—NUMBERS IN DISTRICTS—QUEENSLAND—AT 31ST DECEMBER, 1938.

Petty Sessions District and Statistical Division.	Horses.			Donkeys, and Mules.	Cattle.			Sheep.								Pigs.
											Breeds.					
	Entire.	Other.	Total.		Dairy.	Other.	Total.	Under One Year.	One Year and Over.	Total.	Merino.	Other Pure Breeds.	Merino Comeback.	Cross Breed.	Unspecified.	
Moreton Division.																
Brisbane (North)	24	2,748	2,772	5	12,712	3,946	16,658	..	7	7	..	..	..	1	6	1,807
Brisbane (South)	4	742	746	..	4,006	1,014	5,020	3	25	28	..	..	..	10	18	537
Beaudesert	38	4,629	4,667	1	37,917	37,769	75,686	162	1,204	1,366	259	1	106	828	172	16,620
Caboolture	9	897	906	..	5,654	4,131	9,785	92	309	401	..	145	36	172	48	1,155
Cleveland	..	527	527	1	693	470	1,163	..	..	..	..	..	..	..	..	232
Crow's Nest	12	2,783	2,795	..	14,059	12,496	26,555	..	2	2	..	..	..	2	..	9,579
Dugandan	20	4,608	4,628	..	21,600	19,610	41,210	25	60	85	..	..	41	42	2	11,935
Esk	19	1,821	1,840	..	8,348	20,927	29,275	38	3,562	3,600	3,201	59	130	195	15	2,970
Gatton	17	3,774	3,791	1	12,933	12,609	25,542	209	681	890	381	112	..	272	125	5,451
Harrisville	14	2,697	2,711	..	11,778	8,190	19,968	40	86	126	41	..	..	84	1	5,851
Ipswich	4	1,745	1,749	..	7,693	7,135	14,828	61	279	340	53	50	..	191	46	1,279
Kilcoy	4	1,110	1,114	2	9,662	7,876	17,538	5	80	85	..	..	..	85	..	3,553
Laidley	16	3,005	3,021	..	10,446	6,525	16,971	..	38	38	..	..	..	..	38	4,035
Logan	12	1,923	1,935	..	12,069	4,233	16,302	47	166	213	1	1	75	136	..	3,241
Lowood	3	1,808	1,811	..	7,475	7,191	14,666	..	..	..	..	..	..	..	..	3,371
Marburg	8	1,354	1,362	..	5,407	2,135	7,542	60	131	191	40	1	..	130	20	2,950
Maroochy	9	3,220	3,229	1	34,705	17,119	51,824	150	542	692	368	76	..	145	103	8,766
Redcliffe	7	1,447	1,454	2	13,672	4,655	18,327	30	344	374	..	2	130	229	13	1,544
Rosewood	16	2,528	2,544	..	12,580	9,710	22,290	718	3,643	4,361	2,049	65	480	405	1,362	4,770
Southport	10	2,054	2,064	..	28,091	11,205	39,296	171	502	673	..	17	15	462	179	6,544
Toogoolawah	19	3,254	3,273	3	15,624	37,908	53,532	125	546	671	..	..	..	645	26	7,682
Woodford	3	1,042	1,045	..	12,091	6,151	18,242	9	85	94	..	..	..	94	..	2,409
Wynnum	1	316	317	..	1,180	355	1,535	..	..	..	..	..	..	..	..	101
Oakey-Cooyar	15	1,362	1,377	..	5,772	6,759	12,531	5	136	141	..	..	..	63	78	2,952
Toowoomba-Helidon ..	13	2,250	2,263	..	9,696	6,437	16,133	..	398	398	..	..	..	..	398	3,531
Total Moreton	297	53,644	53,941	16	315,863	256,556	572,419	1,950	12,826	14,776	6,393	529	1,013	4,191	2,650	112,865

Wide Bay Division.																
Biggenden	20	2,614	2,634	..	21,212	22,354	43,566	21	112	133	11	18	..	104	..	4,300
Bundaberg	40	6,322	6,362	3	20,339	40,140	60,479	76	2,285	2,361	1,797	..	260	68	236	3,030
Childers	22	1,869	1,891	..	3,315	11,501	14,816	..	..	..	..	..	..	..	..	406
Eidsvold	13	2,745	2,758	..	9,360	53,265	62,625	51	372	423	91	..	152	92	88	1,910
Gayndah	34	6,328	6,362	..	37,265	96,579	133,844	76	190	266	..	12	10	215	29	9,622
Gin Gin	23	3,205	3,228	2	7,252	51,354	58,606	81	196	277	..	68	..	193	16	1,072
Gympie	35	6,185	6,220	..	81,950	46,597	128,547	39	384	423	..	5	..	312	106	21,904
Kilkivan	8	1,203	1,211	..	6,545	15,125	21,670	3	52	55	24	..	..	31	..	1,482
Maryborough	13	3,225	3,238	2	11,127	13,555	24,682	122	520	642	..	215	51	193	183	1,592
Mount Perry	9	1,357	1,366	..	1,653	34,327	35,980	2	9	11	11	..	..	..	..	116
Nanango	49	9,993	10,042	5	46,773	60,149	106,922	1,010	2,069	3,079	1,463	21	313	1,186	96	22,305
Tiaro	20	2,976	2,996	..	18,933	34,036	52,969	39	294	333	..	..	..	311	22	3,039
Wienholt	53	10,343	10,396	3	59,089	78,196	137,285	146	1,358	1,504	1,013	1	20	203	267	29,762
Total Wide Bay	339	58,365	58,704	15	324,813	557,178	881,991	1,666	7,841	9,507	4,410	340	806	2,908	1,043	100,540
Downs Division.																
Allora	26	3,192	3,218	..	6,292	5,718	12,010	3,544	7,924	11,468	6,484	1,251	1,261	2,472	..	3,336
Chinchilla	25	4,212	4,237	..	23,359	39,368	62,727	3,476	47,744	51,220	31,022	1,737	1,127	7,230	10,104	4,403
Clifton	37	5,032	5,069	..	10,916	8,204	19,120	4,839	20,529	25,368	14,919	274	4,763	4,066	1,346	5,791
Condamine	23	4,083	4,106	..	10,899	61,375	72,274	16,170	138,675	154,845	147,906	952	3,334	1,043	1,610	1,066
Dalby	65	9,504	9,569	..	42,941	81,933	124,874	83,171	819,483	902,654	813,320	1,807	43,267	17,029	27,231	10,680
Goondiwindi	32	3,343	3,375	..	1,189	41,975	43,164	131,408	702,404	833,812	825,598	522	139	1,977	5,576	199
Inglewood	24	2,423	2,447	..	4,986	19,747	24,733	50,477	283,897	334,374	313,906	935	2,085	5,653	11,795	771
Killarney	9	2,227	2,236	..	5,450	6,165	11,615	1,424	6,532	7,956	6,635	74	1,247	..	..	1,587
Oakey (exc. Cooyar)	38	6,380	6,418	..	40,348	23,821	64,169	15,747	104,827	120,574	97,750	3,927	7,588	9,274	2,035	17,966
Pittsworth	31	5,265	5,296	..	21,838	22,033	43,871	29,976	168,016	197,992	130,319	2,997	18,781	40,631	5,264	9,102
Stanthorpe	9	1,532	1,541	..	1,026	6,101	7,127	28,152	248,070	276,222	264,831	146	616	4,294	6,335	145
Texas	10	1,120	1,130	5	2,054	6,993	9,047	27,061	105,321	132,382	128,918	29	2,425	..	1,010	578
Toowoomba (exc. Helidon)	31	4,141	4,172		15,838	8,393	24,231	1,192	11,519	12,711	7,057	312	210	5,132	..	6,105
Warwick	42	6,949	6,991	1	13,400	26,056	39,456	15,797	248,132	263,929	251,809	1,288	7,467	3,365	..	3,922
Total Downs	402	59,403	59,805	6	200,536	357,882	558,418	412,434	2,913,073	3,325,507	3,040,474	16,251	94,310	102,166	72,306	65,651
Maranoa Division.																
Bollon	13	1,839	1,852	1	468	8,103	8,571	74,094	448,531	522,625	522,625	..	..	..	..	18
Dirranbandi	21	2,575	2,596	..	651	8,652	9,303	137,341	666,355	803,696	801,046	..	..	2,650	..	20
Mitchell	53	6,151	6,204	1	1,339	79,273	80,612	108,570	644,633	753,203	752,781	400	22	..	..	184
Roma	62	7,883	7,945	..	10,429	79,276	89,705	117,350	553,859	671,209	667,190	407	2,406	1,206	..	1,037
St. George	8	1,235	1,243	..	412	8,378	8,790	47,255	387,971	435,226	427,346	..	7,880	..	..	116
Surat	12	1,853	1,865	..	932	8,544	9,476	98,764	595,857	694,621	690,848		3,773	..	..	40
Yeulba	9	927	936	..	985	9,430	10,415	600	1,177	1,777	1,777		..	..	..	55
Total Maranoa	178	22,463	22,641	2	15,216	201,656	216,872	583,974	3,298,383	3,882,357	3,863,613	807	14,081	3,856	..	1,470
South Western Division.																
Adavale	6	732	738	..	63	5,475	5,538	21,175	159,506	180,681	180,681	..	..	..	..	..
Augathella	22	2,293	2,315	..	559	34,350	34,909	87,962	244,221	332,183	332,183	..	..	..	..	37
Charleville	28	3,282	3,310	..	1,267	16,013	17,280	132,972	778,007	910,979	910,979	..	..	..	..	48
Cunnamulla	42	3,556	3,598	3	862	12,194	13,056	258,514	986,236	1,244,750	1,244,750	..	..	..	..	104
Eulo	8	970	978	..	186	3,717	3,903	33,245	222,447	255,692	255,692	..	..	..	..	6
Hungerford	7	625	632	..	21	4,563	4,584	4,049	155,071	159,120	158,600	..	520	..	..	10
Quilpie	19	2,307	2,326	2	239	17,049	17,288	84,422	389,146	473,568	473,568	..	..	..	..	..
Thargomindah	15	2,351	2,366	5	80	52,723	52,803	1,330	48,036	49,366	49,366	..	..	..	..	10
Total South Western	147	16,116	16,263	10	3,277	146,084	149,361	623,669	2,982,670	3,606,339	3,605,819	..	520	..	..	215
Total South Queensland	*1,363*	*209,991*	*211,354*	*49*	*859,705*	*1,519,356*	*2,379,061*	*1,623,695*	*9,214,795*	*10,838,486*	*10,520,709*	*17,927*	*110,730*	*113,121*	*75,999*	*280,741*

Table No. 2—continued.

LIVE STOCK.—NUMBERS IN DISTRICTS, QUEENSLAND, AT 31ST DECEMBER, 1938.

Petty Sessions District and Statistical Division.	Horses.			Donkeys and Mules.	Cattle.			Sheep.								Pigs.
											Breeds.					
	Entire.	Other.	Total.		Dairy.	Other.	Total.	Under One Year.	One Year and Over.	Total.	Merino.	Other Pure Breeds.	Merino Comeback.	Cross Breed.	Unspecified.	
Port Curtis Division.																
Banana	19	2,172	2,191	..	3,600	59,987	63,587	8,840	18,473	27,313	24,014	202	..	1,958	1,139	171
Gladstone	47	6,478	6,525	2	28,888	117,317	146,205	142	1,785	1,927		501	99	1,191	136	3,207
Monto	24	4,477	4,501	..	29,687	49,856	79,543	298	1,276	1,574	63	..	14	1,301	196	8,855
Mount Morgan	24	7,837	7,861	1	37,661	84,503	122,164	1,324	3,396	4,720	1,771	..	1,401	1,525	23	5,777
Rockhampton	85	14,293	14,378	3	32,440	344,945	377,385	2,827	18,989	21,816	5,835	9,565	516	3,436	2,464	4,687
St. Lawrence	49	4,555	4,604	..	367	158,066	158,433	197	11,783	11,980	11,236	..	32	712	..	60
Taroom	23	3,365	3,388	..	689	98,463	99,152	12,723	53,514	66,237	60,563	..	1,645	449	3,580	29
Total Port Curtis ..	271	43,177	43,448	6	133,332	913,137	1,046,469	26,351	109,216	135,567	103,482	10,268	3,707	10,572	7,538	22,786
Central Western Division.																
Alpha	33	4,318	4,351	..	869	58,766	59,635	13,267	353,946	367,213	365,742	..	1,471	..	..	54
Aramac	19	1,951	1,970	5	379	3,865	4,244	92,320	539,237	631,557	631,557	..	..	..	..	..
Barcaldine	19	1,671	1,690	..	710	3,375	4,085	134,531	483,583	618,114	618,114	..	..	..	..	383
Blackall	25	2,665	2,690	..	545	5,448	5,993	204,702	654,063	858,765	858,765	..	..	..	..	75
Clermont	69	8,392	8,461	1	1,460	154,945	156,405	65,068	600,309	665,377	660,307	50	..	5,020	..	360
Emerald	25	3,251	3,276	..	727	64,596	65,323	31,173	302,565	333,738	333,738	..	..	..	..	209
Longreach	41	4,408	4,449	1	1,420	10,704	12,124	227,591	957,030	1,184,621	1,184,621	..	..	..	..	362
Muttaburra	29	2,606	2,635	1	1,056	4,664	5,720	184,434	881,048	1,065,482	1,065,482	..	..	..	..	..
Springsure	50	5,145	5,195	..	295	100,251	100,546	43,794	250,943	294,737	291,307	..	3,430	..	..	76
Tambo	19	2,021	2,040	..	487	20,134	20,621	104,156	439,773	543,929	543,929	..	..	..	..	35
Total Central Western ..	329	36,428	36,757	8	7,948	426,748	434,696	1,101,036	5,462,497	6,563,533	6,553,562	50	4,901	5,020	..	1,554
Far Western Division.																
Boulia	10	2,136	2,146	2	91	30,906	30,997	55,706	166,396	222,102	222,102	..	..	..	..	12
Diamantina	4	1,095	1,099	..	..	35,731	35,731	..	..	..	..	..	..	..	..	..
Isisford	15	1,586	1,601	..	314	3,334	3,648	101,121	220,804	321,925	321,925	..	..	..	..	40
Jundah	6	1,362	1,368	3	89	14,887	14,976	25,531	79,674	105,205	102,852	..	..	2,353	..	..
Windorah	21	2,685	2,706	8	142	45,939	46,081	10,714	96,314	107,028	107,028	..	..	..	..	..
Winton	31	4,080	4,111	4	837	39,321	40,158	213,514	950,837	1,164,351	1,148,851	15,500	..	..	..	62
Total Far Western ..	87	12,944	13,031	17	1,473	170,118	171,591	406,586	1,514,025	1,920,611	1,902,758	15,500	..	2,353	..	114
Total Central Queensland	*687*	*92,549*	*93,236*	*31*	*142,753*	*1,510,003*	*1,652,756*	*1,533,973*	*7,085,738*	*8,619,711*	*8,559,802*	*25,818*	*8,608*	*17,945*	*7,538*	*24,454*
Edgecumbe Division.																
Ayr	29	6,888	6,917	33	1,863	36,934	38,797	2	154	156	15	..	..	21	120	643
Bowen	24	3,772	3,796	1	1,743	28,893	30,636	..	72	72	..	..	..	..	72	291
Charters Towers	100	14,043	14,143	61	1,320	307,466	308,786	199	1,001	1,200	800	43	33	199	125	870
Collinsville	24	3,775	3,799	..	331	155,281	155,612	..	34	34	..	..	..	..	34	28
Mackay	138	23,192	23,330	7	14,528	149,207	163,735	207	1,330	1,537	129	21	..	1,239	148	1,454
Proserpine	20	4,237	4,257	4	1,599	12,589	14,188	140	1,268	1,408	..	..	..	1,242	166	265
Ravenswood	9	1,009	1,018	1	58	21,273	21,331	..	..	..	..	..	..	..	..	34
Townsville	19	2,629	2,648	10	2,603	24,851	27,454	48	725	773	..	..	453	1	319	1,321
Total Edgecumbe ..	363	59,545	59,908	117	24,045	736,494	760,539	596	4,584	5,180	944	64	486	2,702	984	4,906

Rockingham Division.																	
Atherton	26	4,040	4,066	4	29,157	15,006	44,163	162	423	585	153	5	215	190	22	10,980
Cairns	7	3,019	3,026	61	2,152	3,542	5,694	..	59	59	..	..	..	..	59	561
Cardwell	10	2,049	2,059	36	799	9,388	10,187	..	..	..	..	..	..	..	..	117
Chillagoe	17	2,237	2,254	29	151	20,413	20,564	..	..	..	..	..	..	..	..	20
Douglas	1	1,344	1,345	30	1,736	2,365	4,101	..	..	..	..	..	..	..	..	237
Herberton	29	4,058	4,087	64	3,690	65,029	68,719	108	147	255	25	26	..	199	5	927
Ingham	13	6,461	6,474	197	2,781	26,819	29,600	10	48	58	..	..	..	32	26	878
Innisfail	18	3,286	3,304	17	2,406	3,771	6,177	..	..	..	..	..	..	..	..	385
Mareeba	14	2,920	2,934	14	1,421	18,629	20,050	..	..	..	..	..	..	..	..	195
Total Rockingham ..	135	29,414	29,549	452	44,293	164,962	209,255	280	677	957	178	31	215	421	112	14,300
Peninsula Division.																	
Coen	12	1,759	1,771	11	145	28,994	29,139	..	..	..	..	..	..	..	..	12
Cook	25	3,578	3,603	9	82	82,134	82,216	..	..	..	..	..	..	..	..	..
Somerset	2	136	138	..	42	1,083	1,125	..	..	..	..	..	..	..	..	98
Total Peninsula ..	39	5,473	5,512	20	269	112,211	112,480	..	..	..	..	..	..	..	..	110
North Western Division.																	
Burke	20	2,449	2,469	5	9	78,891	78,900	2,790	19,480	22,270	21,138	..	12	1,120	..	2
Camooweal	13	2,414	2,427	16	4	80,078	80,082	3,540	24,370	27,910	27,910		..		..	102
Cloncurry	78	9,922	10,000	30	757	219,018	219,775	201,358	634,365	835,723	835,123	..	600	..	..	299
Croydon	7	1,408	1,415	8	150	30,301	30,451	..	..	..	..	..	..	..	..	11
Etheridge	53	8,412	8,465	34	99	198,270	198,369	..	..	..	..	..	..	..	..	143
Hughenden	60	4,432	4,492	1	863	50,678	51,541	109,242	705,737	814,979	808,852	..	6,127	..	..	122
Julia Creek	43	5,288	5,331	4	697	57,770	58,467	98,731	939,195	1,037,926	1,037,926	..	..	..	..	31
Mount Isa	3	568	571	2	366	1,850	2,216	..	..	..	..	..	..	..	..	41
Norman	36	5,276	5,312	9	8	201,759	201,767	1,010	3,586	4,596	4,596	..	..	..	..	24
Richmond	37	4,443	4,480	2	694	60,736	61,430	182,142	768,689	950,831	950,831	..	..	..	..	40
Total North Western ..	350	44,612	44,962	106	3,647	979,351	982,998	598,813	3,095,422	3,694,235	3,686,376	..	6,739	1,120	..	815
Total North Queensland	*887*	*139,044*	*139,931*	*695*	*72,254*	*1,993,018*	*2,065,272*	*599,689*	*3,100,683*	*3,700,372*	*3,687,498*	*95*	*7,440*	*4,243*	*1,096*	*20,131*
Total State	2,937	441,584	444,521	775	1,074,712	5.022,377	6.097,089	3,757.355	19.401,214	23,158,569	22.768,009	43,840	126,778	135,309	84,633	325 326
Pastoral District.							PASTORAL DISTRICTS.									
Burke	235	30,923	31,158	63	3,110	616,886	619,996	..	..	2,953.594	..	..	..	..	..	466
Burnett	195	36,091	36,286	6	196,191	372,665	568,856	..	..	6,717	..	..	..	..	..	73,794
Cook	193	32.574	32,767	216	37,417	474,293	511,710	..	..	641		..	..	..	..	12,642
Darling Downs	399	58,863	59,262	6	199,803	339,676	539,479	..	..	3,324,498	..	..	..	..	..	67,018
Gregory North	70	9,348	9,418	11	980	166,619	167,599	..	..	1,728,523	..	..	..	..	..	258
Gregory South	41	5,636	5,677	13	241	97,157	97,398	..	..	284,632	..	..	..	..	..	5
Leichhardt	302	39,954	40,256	6	23,760	784,117	807,877	..	..	1,293,090	..	..	..	..	..	2,296
Maranoa	178	22,036	22,214	2	12,663	169,895	182,558	..	..	4,332,042	..	..	..	..	..	1,296
Mitchell	189	19,189	19,378	9	5,380	56,585	61,965	..	..	5,474,022	..	..	..	..	..	899
Moreton	296	53,223	53,519	18	804,415	256,750	561,165	..	..	14,464	..	..	..	..	..	109,139
North Kennedy	252	44,007	44,259	387	16,202	533,810	550,012	..	..	3,602	..	..	..	..	..	5,280
Port Curtis	157	26,962	27,119	5	100,893	460,600	561,493	..	..	28,439	..	..	..	..	..	14,219
South Kennedy	149	24,191	24,340	21	11,070	386,322	397,392	..	..	401,178	..	..	..	..	..	1,224
Warrego	122	13,129	13,251	5	3,227	104,332	107,559	..	..	3,308,678	..	..	..	..	..	224
Wide Bay	159	25,458	25,617	7	159,360	202,670	362,030	..	..	4,446	..	..	..	..	..	36,566
Total State	2,937	441,584	444,521	775	1,074,712	5.022,377	6,097,089	3,757,355	19,401,214	23,158,569	22.768,009	43,840	126,778	135,309	84,633	325,326

Table No. 3.—SIZES OF CATTLE HERDS—AT 31ST DECEMBER, 1938.

Statistical Division.	1 to 99.		100 to 199.		200 to 299.		300 to 499.		500 to 999.		1,000 to 4,999.		5,000 to 9,999.		10,000 and Upwards.		Totals.	
	Owners.	Cattl	Owners.	Cattle.	Owners.	Cattle	Owners	Cattle.	Owners.	Cattle.	Owners	Cattle.	Owners	Cattle	Owners.	Cattle.	Owners.	Cattle.
Moreton	10,568	342,799	790	106,422	146	35,305	97	36,048	45	29,703	14	22,142	..	..	..	..	11,660	572,419
Wide Bay	8,925	324,580	1,104	148,927	247	59,045	199	76,377	148	101,450	83	149,936	2	11,515	1	10,161	10,709	881,991
Downs	7,297	246,913	797	107,507	219	52,375	119	43,912	66	45,404	31	56,400	1	5,907	..	..	8,530	558,418
Maranoa	1,309	38,478	200	27,561	70	16,641	59	22,260	34	22,056	21	39,531	5	39,658	1	10,687	1,699	216,872
South Western	535	15,462	66	9,358	24	5,911	18	6,973	22	15,523	18	32,754	6	47,784	1	15,596	690	149,361
Total South Queensland	*28,634*	*968,232*	*2,957*	*399,775*	*706*	*169,277*	*492*	*185,570*	*315*	*211,136*	*167*	*300,763*	*14*	*104,864*	*3*	*36,444*	*33,288*	*2,379,061*
Port Curtis	3,590	141,549	639	87,342	206	49,870	203	77,469	207	144,123	189	355,225	21	145,584	4	45,307	5,059	1,046,469
Central Western	1,295	31,107	120	16,679	73	18,201	84	31,788	78	55,893	87	158,312	18	122,716	..	..	1,755	434,696
Far Western	252	5,625	16	1,975	9	2,084	9	3,331	16	11,121	23	46,871	9	62,430	3	38,154	337	171,591
Total Central Queensland	*5,137*	*178,281*	*775*	*105,996*	*288*	*70,155*	*296*	*112,588*	*301*	*211,137*	*299*	*560,408*	*48*	*330,730*	*7*	*83,461*	*7,151*	*1,652,756*
Edgecumbe	3,341	56,957	180	25,131	89	21,329	86	33,421	85	60,490	106	231,323	23	148,090	10	183,798	3,920	760,539
Rockingham	2,582	61,813	123	16,415	26	5,812	27	10,081	20	14,480	23	53,486	3	22,138	2	25,030	2,806	209,255
Peninsula	23	503	7	1,058	4	965	5	2,064	5	3,414	16	36,426	5	38,006	1	30,044	66	112,480
North Western	498	14,484	82	11,798	32	7,741	51	19,294	65	44,243	77	175,533	26	196,913	29	512,992	860	982,998
Total North Queensland	*6,444*	*133,757*	*392*	*54,402*	*151*	*35,847*	*169*	*64,860*	*175*	*122,627*	*222*	*496,768*	*57*	*405,147*	*42*	*751,864*	*7,652*	*2,065,272*
Total Queensland	40,215	1,280,270	4,124	560,173	1,145	275,279	957	363,018	791	547,900	688	1,357,939	119	840,741	52	871,769	48,091	6,097,089
Pastoral District.																		
Burke	366	10,475	49	6,950	14	3,363	31	11,648	41	28,778	46	91,675	23	176,944	17	290,163	587	619,996
Burnett	4,009	183,988	717	96,383	167	40,143	137	52,986	113	77,900	58	95,780	2	11,515	1	10,161	5,204	568,856
Cook	1,952	51,080	122	16,577	29	6,595	38	14,646	30	19,185	51	123,785	8	59,534	11	220,308	2,241	511,710
Darling Downs	7,287	246,050	769	103,533	201	48,033	107	39,684	59	40,964	30	55,308	1	5,907	..	..	8,454	539,479
Gregory North	159	3,619	11	1,275	7	1,657	6	2,417	11	7,277	19	41,961	9	62,627	3	46,766	225	167,599
Gregory South	60	1,609	7	930	3	727	5	1,893	7	4,852	11	20,347	4	27,491	3	39,549	100	97,398
Leichhardt	2,108	43,932	246	35,304	140	33,953	153	58,053	155	109,648	173	317,518	26	175,421	3	34,048	3,004	807,877
Maranoa	1,259	36,688	167	22,788	59	14,173	45	16,840	25	16,210	18	34,967	4	30,205	1	10,687	1,578	182,558
Mitchell	718	16,963	50	6,845	21	5,153	21	7,739	10	7,185	7	18,080	..	..	..	..	827	61,965
Moreton	10,231	332,013	759	102,250	148	35,786	96	35,778	46	30,395	16	24,943	..	..	..	..	11,296	561,165
North Kennedy	2,224	39,872	127	17,813	67	16,148	61	23,056	62	43,435	76	177,443	13	83,077	8	149,168	2,638	550,012
Port Curtis	2,765	105,599	456	62,910	129	31,137	123	47,609	113	79,053	94	179,223	6	44,703	1	11,259	3,687	561,493
South Kennedy	1,150	25,967	76	10,347	42	10,215	49	18,911	46	33,129	53	107,857	19	131,306	4	59,660	1,439	397,392
Warrego	484	13,731	60	8,402	26	6,416	13	4,933	24	17,038	15	25,028	4	32,011	..	..	626	107,559
Wide Bay	5,443	168,684	508	67,866	92	21,780	72	26,825	49	32,851	21	44,024	..	..	..	..	6,185	362,030
Total Queensland	40,215	1,280,270	4,124	560,173	1,145	275,279	957	363,018	791	547,900	688	1,357,939	119	840,741	52	871,769	48,091	6,097,089

Table No. 4.—SIZES OF CATTLE HERDS—1929-1938.

At 31st December.	1 to 99.		100 to 199.		200 to 299.		300 to 499.		500 to 999.		1,000 to 4,999.		5,000 to 9,999.		10,000 and Upwards.		Totals.	
	Owners.	Cattle.	Owners	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
1929	37,376	1,113,944	4,359	713,674	*	*	841	326,676	633	447,727	601	1,256,436	106	729,907	43	620,224	43,953	5,208,588
1930	37,590	1,153,767	4,709	768,192	*	*	867	338,439	652	458,244	640	1,330,754	98	658,532	37	755,796	44,602	5,463,724
1931	38,715	1,219,244	5,006	822,241	*	*	889	346,963	679	477,297	617	1,286,905	105	704,694	46	693,055	46,051	5,550,399
1932	39,805	1,254,112	4,978	812,966	*	*	856	330,355	708	495,940	611	1,286,119	101	708,518	40	647,055	47,096	5,535,065
1933	40,064	1,297,024	3,969	554,522	1,126	280,329	878	343,673	718	510,694	645	1,321,670	108	766,659	37	706,599	47,549	5,781,170
1934	40,204	1,332,945	4,195	587,156	1,195	296,263	921	358,358	771	544,854	666	1,375,325	111	795,913	41	761,827	48,110	6,052,641
1935	40,138	1,323,624	4,216	590,976	1,229	304,823	921	358,926	800	563,413	682	1,379,209	113	795,503	47	716,530	48,142	6,033,004
1936	40,637	1,263,110	3,998	541,017	1,152	276,873	909	344,940	826	567,691	658	1,340,831	113	799,493	43	816,617	48,341	5,950,572
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,088	261,513	954	360,027	781	539,072	683	1,365,811	117	792,188	51	858,969	48,381	5,959,165

Table No. 5.

SIZES OF SHEEP FLOCKS—AT 31ST DECEMBER, 1938.

Statistical Division.	1 to 49.		50 to 99.		100 to 249.		250 to 499.		500 to 999.		1,000 to 1,999.		2,000 to 4,999.		5,000 to 9,999.		10,000 to 19,999.		20,000 to 49,999.		50,000 and over.		Total.	
	Owners.	Sheep.	Owners	Sheep	Owners	Sheep	Owners	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners	Sheep	Owners	Sheep	Owners	Sheep.	Owners.	Sheep.
Moreton	136	2,564	24	1,442	13	2,005	1	398	2	1,200	3	3,805	1	3,362	..	..						..	180	14,776
Wide Bay	127	1,793	18	1,267	5	725	4	1,135	2	1,590	2	2,997	..	..	..	..					..	..	158	9,507
Downs	199	3,584	82	6,147	127	21,574	207	77,356	382	274,278	382	545,444	381	1,204,751	99	641,246	24	321,908	8	229,219		..	1,891	3,325,507
Maranoa	33	771	15	1,095	18	2,878	32	11,262	92	68,995	194	283,595	362	1,166,693	164	1,113,432	53	684,856	14	371,826	2	176,954	979	3,882,357
South Western	9	111	5	334	4	585	7	2,700	15	10,353	42	62,486	209	715,773	151	1,009,742	73	976,387	20	661,979	3	165,889	538	3,606,339
Total South Queensland	*504*	*8,823*	*144*	*10,285*	*167*	*27,767*	*251*	*92,851*	*493*	*356,416*	*623*	*898,327*	*953*	*3,090,579*	*414*	*2,764,420*	*150*	*1,983,151*	*42*	*1,263,024*	*5*	*342,843*	*3,746*	*10,838,486*
Port Curtis	68	1,508	26	1,798	16	2,331	13	4,834	19	13,116	14	15,086	12	34,010	5	39,884	1	19,000		..		..	174	135,567
Central Western	20	417	15	997	23	3,793	22	8,302	44	34,195	98	149,221	321	1,101,656	280	1,934,162	110	1,445,366	53	1,504,039	6	381,385	992	6,563,533
Far Western	8	121	2	170	6	960	10	3,475	14	9,873	29	39,799	83	288,061	87	601,341	24	310,088	16	478,970	3	187,753	282	1,920,611
Total Central Queensland	*96*	*2,046*	*43*	*2,965*	*45*	*7,084*	*45*	*16,611*	*77*	*57,184*	*141*	*208,106*	*416*	*1,423,727*	*372*	*2,575,387*	*135*	*1,774,454*	*69*	*1,983,009*	*9*	*569,138*	*1,448*	*8,619,711*
Edgecumbe	23	570	9	708	5	900	6	2,252	1	750												..	44	5,180
Rockingham	13	228	3	165	3	564	..	..		..		..										..	19	957
Peninsula	..	..	..	..	..	..			..	..	..	..			..	..						..	..	..
North Western	5	70	5	355	3	598	..		10	6,715	15	20,595	140	503,653	165	1,120,453	69	975,035	32	878,459	3	188,302	447	3,694,235
Total North Queensland	*41*	*868*	*17*	*1,228*	*11*	*2,062*	*6*	*2,252*	*11*	*7,465*	*15*	*20,595*	*140*	*503,653*	*165*	*1,120,453*	*69*	*975,035*	*32*	*878,459*	*3*	*188,302*	*510*	*3,700,372*
Total Queensland ..	641	11,737	204	14,478	223	36,913	302	111,714	581	421,065	779	1,127,028	1,509	5,017,959	951	6,460,260	354	4,732,640	143	4,124,492	17	1,100,283	5,704	23,158,569
Pastoral District.																								
Burke	4	28	4	300	1	238	..		8	5,415	11	15,373	122	438,792	148	1,005,299	53	730,125	25	677,170	1	71,854	377	2,953,594
Burnett	58	790	9	645	5	730	4	1,125	3	2,227	1	1,200											80	6,717
Cook	6	149	3	165	2	330					..	..											11	644
Darling Downs	197	3,575	82	6,147	127	21,574	207	77,356	382	274,278	381	544,444	381	1,204,751	99	641,246	24	321,908	8	229,219		..	1,888	3,324,498
Gregory North	6	101	1	55	2	360	1	400	3	1,838	12	16,467	50	187,430	70	476,153	25	320,140	15	468,985	4	247,594	189	1,728,523
Gregory South	2	44	1	80	..		3	1,165	2	1,690	10	14,820	15	46,680	13	92,280	3	41,480	1	22,468	1	63,925	51	284,632
Leichhardt	33	849	28	1,851	20	3,411	15	5,613	38	28,527	83	120,782	110	352,684	44	303,610	10	134,546	11	341,217		..	392	1,293,090
Maranoa	31	726	12	933	17	2,758	30	10,546	90	67,605	180	264,132	364	1,183,435	180	1,216,653	69	902,852	19	505,448	2	176,954	994	4,332,042
Mitchell	11	228	5	370	15	2,307	22	8,044	29	21,562	43	62,831	246	855,312	240	1,646,827	102	1,363,548	44	1,204,822	5	308,171	762	5,474,022
Moreton	136	2,565	25	1,516	11	1,618	1	398	2	1,200	3	3,805	1	3,362									179	14,464
North Kennedy	21	410	4	326	5	934	5	1,932															35	3,602
Port Curtis	52	954	12	885	7	891	4	1,730	7	4,946	2	3,220	3	6,300	1	9,513							88	28,439
South Kennedy	9	222	5	358	2	315	4	1,325	3	2,490	13	20,884	24	80,142	14	101,567	5	63,257	2	57,731	1	72,827	82	401,178
Warrego	8	82	5	334	4	585	5	1,820	14	9,287	39	57,273	193	659,071	142	967,112	63	836,784	18	617,372	3	158,958	494	3,308,678
Wide Bay	67	1,014	8	513	5	862	1	260		..	1	1,797										..	82	4,446
Total Queensland ..	641	11,737	204	14,478	223	36,913	302	111,714	581	421,065	779	1,127,028	1,509	5,017,959	951	6,460,260	354	4,732,640	143	4,124,492	17	1,100,283	5,704	23,158,569

Table No. 6.

SIZES OF SHEEP FLOCKS—1929-1938.

At 31st December.	1 to 49.		50 to 99.		100 to 249.		250 to 499.		500 to 999.		1,000 to 1,999.		2,000 to 4,999.		5,000 to 9,999.		10,000 to 19,999.		20,000 to 49,999.		50,000 and over.		Total.	
	Owners.	Sheep.	Owners	Sheep	Owners.	Sheep	Owners	Sheep	Owners	Sheep	Owners.	Sheep	Owners	Sheep	Owners	Sheep	Owners	Sheep	Owners	Sheep	Owners	Sheep.	Owners	Sheep
1929	886	20,339	238	15,952	369	59,639	420	156,177	548	415,464	766	1,148,611	1,234	4,088,974	662	4,560,694	286	4,021,226	127	3,791,241	29	2,045,986	5,565	20,324,303
1930	958	19,473	240	16,625	332	54,608	414	155,049	520	398,080	673	1,006,284	1,214	4,078,142	734	5,055,772	313	4,356,680	158	4,633,047	37	2,768,283	5,593	22,542,043
1931	992	20,200	243	17,080	302	49,986	374	140,701	526	401,406	677	1,002,776	1,231	4,179,403	772	5,348,174	303	4,144,829	153	4,445,418	37	2,574,305	5,610	22,324,278
1932	916	17,266	237	16,819	275	45,527	360	134,538	551	415,076	679	1,026,160	1,250	4,262,626	767	5,341,945	302	4,132,447	109	3,329,982	37	2,590,479	5,483	21,312,865
1933	859	15,493	218	14,987	252	41,844	376	139,962	527	392,199	710	1,087,876	1,243	4,217,809	787	5,442,649	273	3,766,895	113	3,338,748	24	1,614,342	5,382	20,072,804
1934	782	15,409	252	17,332	223	37,517	330	125,188	518	391,620	698	1,055,507	1,371	4,714,367	770	5,343,165	302	4,128,259	126	3,742,267	30	2,003,551	5,402	21,574,182
1935	811	13,954	256	17,051	265	43,718	398	149,507	635	487,052	750	1,130,779	1,446	4,839,661	613	4,225,195	246	3,378,764	101	2,926,491	12	847,921	5,533	18,060,093
1936	758	13,385	241	16,982	256	41,351	326	120,009	493	361,321	712	1,022,427	1,385	4,570,327	741	5,013,343	297	3,994,514	124	3,710,511	16	1,147,579	5,349	20,011,749
1937	704	12,818	194	13,500	249	40,562	285	105,064	511	373,979	737	1,065,362	1,426	4,741,090	911	6,224,073	320	4,331,191	139	4,057,170	22	1,533,161	5,498	22,497,970
1938	641	11,737	204	14,478	223	36,913	302	111,714	581	421,065	779	1,127,028	1,509	5,017,959	951	6,460,260	354	4,732,640	143	4,124,492	17	1,100,283	5,704	23,158,569

Table No. 7.

LIVESTOCK—INCREASES, SLAUGHTERINGS, AND LOSSES—QUEENSLAND, 1938.

Statistical Division.	CATTLE.				SHEEP.																PIGS.
	BRANDED.			Killed on Holdings	LAMBING.			LOSSES.												Killed on Holdings	Killed on Holdings
								CAUSES.											Per 100 Sheep on 31st Dec., '37		
	Males.	Females.	Per 100 Cattle on 31st Dec., '37		Matings.	Lambs Marked.	Per Cent.	Cancer.	Dingo.	Drought.	Flood.	Fly.	Lambing	Old Age.	Shearing	Worms.	Other.	Total.			
	No.	No.	%	No.	No.	No.	%	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	%	No.	No.
Moreton	14,440	41,453	10·49	763	4,209	2,668	63·39	9	288	46	2	67	87	399	27	131	37	1,093	9·73	417	944
Wide Bay	46,858	76,933	14·67	2,516	3,304	1,813	54·87	3	145	28	11	195	52	148	42	504	83	1,211	25·08	195	829
Downs	41,547	58,637	18·07	2,129	752,797	483,409	64·22	2,251	12,141	64,862	2,494	44,847	22,628	29,954	11,452	25,985	16,928	233,542	7·64	36,211	709
Maranoa	28,263	28,047	25·82	2,048	1,198,540	719,359	60·02	2,199	3,033	153,194	1,650	54,284	26,901	42,606	8,101	4,426	4,121	300,515	7·79	48,136	68
South-Western	15,489	15,587	21·00	1,708	1,481,131	768,225	51·87	4,508	4,850	241,829	5,916	32,688	23,135	39,840	7,963	326	11,247	372,302	10·24	50,191	95
Total, South Queensland	*146,597*	*220,657*	*15·99*	*9,164*	*3,439,981*	*1,975,474*	*57·43*	*8,970*	*20,457*	*459,959*	*10,073*	*132,081*	*72,803*	*113,147*	*27,585*	*31,372*	*32,416*	*908,663*	*8·60*	*135,150*	2,645
Port Curtis	96,130	108,133	19·83	4,221	47,113	28,927	61·40	70	1,289	4,005	46	2,482	677	2,578	96	1,107	403	12,753	16·30	1,246	254
Central-Western	57,055	55,712	27·12	3,046	2,541,505	1,273,181	50·10	13,029	21,522	333,579	3,541	75,672	48,708	115,053	20,702	6,782	10,757	649,345	10·18	69,858	59
Far-Western	18,595	17,936	20·31	1,320	1,011,416	445,084	44·01	5,069	10,775	241,201	6,996	12,731	14,543	41,842	10,292	207	5,123	348,779	16·05	24,694	2
Total, Central Queensland	*171,780*	*181,781*	*21·75*	*8,587*	*3,600,034*	*1,747,192*	*48·53*	*18,168*	*33,586*	*578,785*	*10,583*	*90,885*	*63,928*	*159,473*	*31,090*	*8,096*	*16,283*	*1,010,877*	*11·71*	*95,798*	315
Edgecumbe	77,903	77,628	21·23	2,879	1,211	669	55·24	1	174	22		39	15	34	2	32	6	325	6·22	116	643
Rockingham	11,363	14,783	11·91	872	529	371	70·13	..	20				5	5		25	41	96	13·26	15	377
Peninsula	14,943	13,709	25·75	774	..	..															23
North-Western	113,905	114,631	23·48	5,650	1,490,676	656,606	44·05	8,804	11,062	168,827	10,096	29,296	21,894	66,855	10,579	70	9,443	336,926	10·22	28,301	60
Total, North Queensland	*218,114*	*220,751*	*21·55*	*10,175*	*1,492,416*	*657,646*	*44·07*	*8,805*	*11,256*	*168,849*	*10,096*	*29,335*	*21,914*	*66,894*	*10,581*	*127*	*9,490*	*337,347*	*10·22*	*28,432*	1,103
Total, Queensland	536,491	623,189	19·46	27,926	8,532,431	4,380,312	51·34	35,943	65,299	1,207,593	30,752	252,301	158,645	339,514	69,256	39,595	58,189	2,256,887	10·03	259,380	4,063
Killed in Factories—																					
For Home Consumption	..	..	..	335,941	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	413,623	300,417
For Export Overseas	..	..	..	693,619	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	174,565	164,249
Killed in Slaughter Houses	..	..	..	266,218	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	322,208	61,724
Total Slaughterings	..	..	..	1,323,704 *a*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,169,776 *b*	530,453

a Including 404,413 calves.

b Including 99,919 lambs.

Table No. 8.

LIVESTOCK PRODUCTION—QUEENSLAND, 1929-1938.

Year Ended 31st December.	Cattle.				Sheep.						Pigs.		
	Brandings.	Killed.		Net Exports Live Cattle. *a*	Lambs Marked.	Per Cent. Lambing.	Losses.	Killed.		Net Exports Live Sheep. *a*	Killed.		Net Exports Live Pigs. *a*
		On Holdings.	Total.					On Holdings.	Total.		On Holdings.	Total.	
	No.	No.	No.	No.	No.	%	No.	No.	No.	No.	No.	No.	No.
1929	996,554	28,194	672,701	94,936	4,257,250	52·46	1,851,105	229,329	1,017,783	—92,771	6,854	361,080	*n*
1930	1,071,842	24,802	634,488	126,024	5,625,924	61·43	1,840,943	259,586	1,497,768	277,382	8,148	404,595	10,336
1931	1,048,399	26,857	591,669	204,717	5,013,286	55·05	2,449,784	268,541	1,938,315	917,508	9,592	416,715	3,672
1932	983,789	28,791	595,948	209,322	4,243,356	47·80	2,920,545	268,876	1,756,781	813,120	8,915	383,543	1,701
1933	1,061,771	30,973	672,683	142,654	3,336,321	44·32	2,935,089	267,644	1,432,592	17,501	8,477	392,732	555
1934	1,203,879	32,519	797,822	213,519	4,979,373	52·67	2,042,567	261,198	1,273,674	242,776	6,080	448,469	—1,278
1935	1,095,591	31,578	859,584	47,791	2,115,883	30·92	4,488,006	254,807	1,019,728	135,899	5,606	521,664	—558
1936	1,087,724	30,465	1,011,119	144,871	4,831,815	57·49	1,574,393	236,897	1,043,744	394,620	8,504	573,981	—3,900
1937	1,112,823	30,786	1,118,859	89,539	5,174,128	58·33	1,810,805	254,875	1,068,984	183,789	4,913	491,832	—2,489
1938	1,159,680	27,926	1,323,704	55,869	4,380,312	51·34	2,256,887	259,380	1,169,776	378,322	4,063	530,453	—3,040

a Overseas and Interstate by land. Interstate by sea are not available. *n* Not available.

Table No. 9.

MEATWORKS—QUEENSLAND, 1929-1938.

Year.	Establishments.	Hands. a	Capital Equipment.		Horsepower of Engines.	Value of Output.	Stock Slaughtered. b					Value at Works. c		
			Value of Land and Buildings.	Value of Machinery and Plant.			Cattle.	Calves.	Sheep.	Lambs.	Pigs.	Cattle and Calves.	Sheep and Lambs.	Pigs.
	No.	No.	£	£	H.P.	£	No.	No.	No.	No.	No.	£	£	£
29	19	2,499	1,560,776	968,572	10,479	5,537,481	331,612	d	59,000	1,516	307,371	2,965,791	49,095	893,351
30	18	2,447	1,468,233	875,413	9,302	5,104,321	303,210	d	186,743	18,269	283,065	2,915,766	125,746	838,742
31	18	2,393	1,459,304	864,702	9,318	4,908,964	341,665	d	487,756	41,434	328,649	2,690,646	271,297	741,314
32	17	1,816	1,365,604	771,373	9,185	3,231,652	229,501	8,273	478,802	34,573	311,599	1,403,998	266,597	604,272
-33	17	2,133	1,190,531	665,682	7,693	4,041,733	311,499	71,705	711,453	121,616	316,727	1,779,215	335,091	623,406
-34	18	2,242	1,204,885	714,192	6,433	4,413,837	388,064	107,091	541,010	53,714	343,727	2,112,831	366,824	762,338
-35	20	2,373	1,386,603	780,362	7,114	5,487,237	412,332	195,233	586,852	71,750	426,141	2,555,841	450,448	954,312
-36 ..	20	2,754	1,438,192	776,823	7,338	5,554,980	383,028	220,534	362,748	46,998	492,416	2,542,667	348,967	1,087,577
-37	22	3,154	1,483,406	861,788	11,251	7,125,772	499,090	276,623	456,687	52,955	458,018	3,504,641	500,227	1,071,741
-38	21	3,772	1,643,324	930,131	12,764	8,481,232	645,051	331,387	500,219	72,222	439,017	4,518,148	496,076	1,207,289

Average for whole year. *b* Including stock slaughtered and subsequently condemned—In 1937–38, cattle 9,601, calves 12,315, sheep 1,958, mbs 14, pigs 4,199. *c* Values partly estimated prior to 1931–32. *d* Included in cattle.

Table No. 10.

MEAT PRODUCED IN MEATWORKS—QUEENSLAND, 1929-1938.

Year.	Quantity. a						Value. a					
	Beef.	Veal.	Mutton.	Lamb.	Pork.	Bacon and Ham.	Beef.	Veal.	Mutton.	Lamb.	Pork.	Bacon and Ham.
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	£	£	£	£	£	£
-29	204,083,395	*b*	2,624,942	46,859	1,289,112	21,710,900	2,835,130	*b*	45,629	775	42,729	1,038,687
-30	181,783,049	*b*	7,821,124	535,898	2,235,411	18,924,040	2,666,569	*b*	97,899	8,866	68,120	1,016,102
-31	206,020,621	*b*	20,791,666	1,289,983	7,274,913	19,842,633	2,190,218	*b*	233,065	24,302	165,509	786,622
-32	136,231,005	*b*	20,863,603	1,110,969	5,161,284	19,639,692	1,295,332	*b*	258,072	21,360	116,161	649,585
-33	184,824,639	8,221,268	29,169,103	3,636,277	7,027,620	16,701,874	1,848,623	121,637	313,677	56,206	153,027	601,413
-34	235,315,404	5,655,949	21,733,362	1,507,122	8,795,106	18,573,812	1,982,258	47,338	305,426	33,631	203,432	676,129
-35	246,579,311	8,917,157	23,861,676	2,084,877	12,108,774	21,474,749	2,434,910	93,193	302,619	45,609	305,172	832,860
-36	207,866,018	9,463,904	13,884,093	1,429,753	13,601,567	23,017,074	2,298,730	106,220	216,714	43,402	350,069	889,112
-37	276,288,408	11,255,627	19,422,734	1,555,768	14,963,011	20,002,189	3,317,191	138,838	291,301	43,252	395,941	781,606
-38	312,050,824	13,517,664	19,577,863	2,210,604	18,576,479	19,486,358*c*	4,467,572	206,190	291,254	65,084	515,808	891,937

cluding canned and potted meats prior to 1935–36. *b* Included in beef. *c* Excluding 357,947 lb. of green bacon finished and 58,326 lb. made on commission.

Table No. 11.

OTHER PRODUCTS OF MEATWORKS—QUEENSLAND, 1929-1938.

Year.	Canned and Potted Meats.	Small Goods.	Meat Extracts.	Meat Meal.	Sausage Casings.	Lard.	Other Edible Fats.	Tallow.	Oils.	Hides.	Skins.	Fertiliser, Dried Blood, etc.
QUANTITY.												
	Lb.	Lb.	Lb.	Lb.	Cwt.	Lb.	Lb.	Tons.	Gallons.	No.	No.	Tons.
29	*a*	*n*	84,283	*n*	*n*	1,112,954	10,574,003	6,455	18,584	329,162	63,146	4,831
30	*a*	*n*	78,843	*n*	*n*	989,890	10,862,045	3,682	13,832	298,455	209,757	4,066
31	*a*	*n*	65,894	*n*	*n*	993,936	13,031,746	4,158	18,125	338,653	532,484	4,935
32	*a*	*n*	81,743	*n*	*n*	1,083,818	8,771,038	3,457	11,902	233,985	456,858	3,616
33	*a*	*n*	31,459	*n*	*n*	893,216	11,436,961	2,444	13,487	329,482	881,262	3,634
34	*a*	*n*	40,744	*n*	*n*	1,174,738	15,908,027	4,638	24,013	324,729	373,831	5,742
35	*a*	*n*	52,184	*n*	*n*	1,262,876	18,648,859	5,232	22,041	411,850	849,920	8,243
36	12,528,405	16,186,673	43,214	2,418,424	8,994	1,303,513	16,001,467	4,398	20,466	603,219*b*	410,140	7,188
37	10,854,405	16,054,140	116,165	3,408,983	11,584	1,174,119	19,876,923	7,436	30,700	775,348*b*	506,497	8,570
-38	10,451,748	14,445,149	51,798	4,372,668	12,666	987,835	17,725,931	6,815	25,873	937,720*b*	572,370	9,281
VALUE.												
	£	£	£	£	£	£	£	£	£	£	£	£
29	*a*	*n*	15,980	*n*	*n*	40,517	231,239	156,290	5,242	463,693	22,857	49,046
30	*a*	*n*	14,955	*n*	*n*	37,216	203,281	94,165	3,142	298,953	35,619	45,096
31	*a*	*n*	8,920	*n*	*n*	30,587	182,898	89,515	3,817	325,698	73,520	48,653
32	*a*	*n*	11,954	*n*	*n*	23,303	99,432	62,520	2,363	189,009	87,305	29,821
33	*a*	*n*	4,170	*n*	*n*	17,093	118,513	46,974	2,618	286,139	165,083	29,764
34	*a*	*n*	5,656	*n*	*n*	22,806	175,014	81,683	4,840	314,594	93,275	45,945
35	*a*	*n*	5,327	*n*	*n*	27,726	216,797	120,128	4,381	367,367	158,834	57,222
36	221,431	312,709	4,095	9,172	31,516	32,666	212,580	111,915	3,851	439,687*b*	116,881	51,802
37	293,326	329,175	10,889	12,937	39,830	29,239	234,712	194,067	6,087	650,834*b*	196,236	60,370
38	297,521	313,985	4,322	17,816	42,704	25,646	184,137	133,885	5,334	666,356*b*	146,308	65,352

(Included in "Meat produced." Collected separately for the first time in 1935–36. (*b*) Including calf skins formerly included with skins.
(Not available.

Table No. 12.

ESTIMATED PRODUCTION OF MEAT—QUEENSLAND, 1929–1938.

Year.	Total Slaughterings.					Estimated Meat Production. *a*.			
	Cattle.	Calves.	Sheep.	Lambs.	Pigs.	Beef and Veal.	Mutton and Lamb.	Pork.	Bacon and Ham.
	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	Lb.
1928–29	639,403	45,793	784,375	21,086	381,288	373,733,138	33,753,755	7,353,301	22,043,114
1929–30	590,233	43,527	1,045,306	44,672	366,591	338,456,778	45,727,589	9,414,090	19,195,176
1930–31	602,187	46,286	1,598,753	72,492	408,056	345,417,720	68,925,029	13,863,958	20,177,556
1931–32	484,714	55,935	1,688,892	73,082	408,215	274,389,392	73,713,602	12,953,717	20,008,227
1932–33	515,706	81,269	1,441,749	123,037	376,842	297,853,133	64,223,568	12,104,684	16,976,59
1933–34	602,445	116,832	1,243,792	55,493	405,995	353,268,642	52,563,891	14,016,747	18,881,267
1934–35	642,153	209,240	1,201,198	74,738	488,463	377,710,249	51,559,009	17,210,239	21,751,444
1935–36	629,205	237,205	922,660	49,798	558,095	345,393,071	38,369,028	18,999,695	23,198,346
1936–37	746,117	294,863	969,890	54,629	528,699	417,583,463	42,893,056	20,509,892	20,229,728
1937–38	915,218	351,194	1,047,612	73,117	513,369	461,755,123	44,642,409	24,398,712	19,607,22

(*a*) Exclusive of quantity used for canning or making small goods, meat extracts, &c., in meatworks and bacon factories.
(*b*) The estimated values of live stock slaughtered were - Cattle and calves £6,455,000, sheep and lambs £1,040,000, and pigs £1,353,000, and the estimated values of meats produced were :– Beef and veal £6,519,000, mutton and lamb £733,000, Pork £688,000, and bacon and ham £898,000.

Table No. 13.

NET EXPORTS OF LIVE STOCK AND WOOL—QUEENSLAND, 1938–1939.

Whence.	Imports.		Exports.		Net Exports.	
	Number.	Value.	Number.	Value.	Number.	Value.
Horses—		£A		£A		£A
Oversea—						
British Malaya	..	..	1	125	1	125
Burma	..	..	4	120	4	120
Hong Kong	..	..	76	1,920	76	1,920
India	..	..	1,206	20,530	1,206	20,530
Netherlands East Indies	..	..	117	1,955	117	1,955
Philippine Islands	..	..	45	965	45	965
Siam	..	..	40	800	40	800
Interstate (By Land)—a						
New South Wales	6,087	49,515	15,564	96,299	9,477	46,784
Northern Territory	1,662	6,820	1,491	6,309	—171	—511
South Australia	1,346	5,543	1,090	3,365	—256	—2,178
Total Horses	9,095	61,878	19,634	132,388	10,539	70,510
Cattle—						
Oversea—						
Hong Kong	..	..	40	680	40	680
New Guinea	..	..	36	371	36	371
Papua	..	..	5	81	5	81
Philippine Islands	..	..	8	263	8	263
United Kingdom	1	276	..	..	—1	—276
United States of America	2	90	..	..	—2	—90
Interstate (By Land)—a						
New South Wales	29,281	103,414	191,119	960,256	161,838	856,842
Northern Territory	39,679	137,682	49	340	—39,630	—137,342
South Australia	1,140	2,964	21,778	155,010	20,638	152,046
Total Cattle	70,103	244,426	213,035	1,117,001	142,932	872,575
Sheep—						
Oversea—						
Papua	..	..	3	5	3	5
Interstate (By Land)—a						
New South Wales	449,371	331,236	1,338,724	837,551	889,353	506,315
South Australia	1,960	1,445	1,094	821	—866	—624
Total Sheep	451,331	332,681	1,339,821	838,377	888,490	505,696
Pigs—						
Oversea—						
New Guinea	..	..	9	54	9	54
Interstate (By Land)—a						
New South Wales	4,460	9,511	6,146	10,948	1,686	1,437
Total Pigs	4,460	9,511	6,155	11,002	1,695	1,491
Wool—*b*	Lb.		Lb.		Lb.	
Oversea—						
Austria	..	..	57,062	3,843	57,062	3,843
Belgium	..	..	28,383,842	1,161,026	28,383,842	1,161,026
Brazil	..	..	65,135	3,619	65,135	3,619
Bulgaria	..	..	19,149	836	19,149	836
Canada	..	..	23,045	786	23,045	786
Ceylon	..	..	1,818	62	1,818	62
Czechoslavakia	..	..	2,968,088	149,782	2,968,088	149,782
Denmark	..	..	140,961	6,058	140,961	6,058
Finland	..	..	3,151	148	3,151	148
France	..	..	32,670,836	1,387,900	32,670,836	1,387,900
Germany	..	..	13,484,904	700,447	13,484,904	700,447
Greece	..	..	32,812	1,340	32,812	1,340
Hong Kong	..	..	4,283	394	4,283	394
India	..	..	6,338	329	6,338	329
Italy	..	..	4,906,480	253,685	4,906,480	253,685
Japan	..	..	11,091,932	603,880	11,091,932	603,880
Netherlands	..	..	5,580,796	279,778	5,580,796	279,778
Poland	..	..	2,160,001	111,905	2,160,001	111,905
Portugal	..	..	504,764	28,128	504,764	28,128
Russia	..	..	4,674	267	4,674	267
Sweden	..	..	2,097,636	104,793	2,097,636	104,793
Switzerland	..	..	730,656	45,771	730,656	45,771
Turkey	..	..	110,543	6,166	110,543	6,166
United Kingdom	..	..	77,090,643	3,380,596	77,090,643	3,380,596
United States of America	..	..	4,973,712	290,022	4,973,712	290,022
Interstate (By Land)—a						
New South Wales	2,269,113	100,691	3,262,036	147,274	992,923	46,583
South Australia	104,135	4,035	..	..	—104,135	—4,035
Total Wool	2,373,248	104,726	190,375,297	8,668,835	188,002,049	8,564,109

a Interstate by sea figures are not available.
b Scoured wool included at its equivalent greasy weight.

— Denotes Excess of Imports.

Table No. 14.

OVERSEA EXPORTS OF LIVESTOCK PRODUCTS—QUEENSLAND, 1938–39.

Product.	Quantity.	Value. £A
utter	127,546,051 lb.	7,154,624
heese	9,488,519 lb.	242,799
ides and Skins (excluding furred Skins)	..	233,035
eather	..	10,101
ivestock—		
Horses	1,489 No.	26,415
Cattle	89 No.	1,395
Sheep	3 No.	5
Pigs	9 No.	54
eat—		
Bacon and Hams	1,421,161 lb.	98,865
Pork	17,960,560 lb.	499,457
Chilled Beef	58,061,462 lb.	971,825
Frozen Beef	163,789,912 lb.	2,538,437
Veal	7,842,042 lb.	121,454
Lamb	1,852,892 lb.	51,452
Mutton	2,352,340 lb.	36,523
Canned and Potted	..	330,426
Other	..	229,165
ilk and Cream	..	222
allow	144,753 cwt.	117,220
ool	187,113,261 lb. *a*	8,521,561
ther Livestock Products	..	26,279
Total	..	£A21,211,314

a Scoured wool included at its equivalent greasy weight.

Table No. 15.

WOOL PRODUCTION—QUEENSLAND, 1938.

District.	Wool Clip.							Wool per Fleece.
	Sheep Shorn.						Wool.	
	Ewes.	Wethers.	Weaners and Hoggets.	Lambs.	Rams.	Total.		
	No.	No.	No.	No.	No.	No.	Lb. Greasy.	Lb. Greasy.
oreton	4,557	1,007	699	160	103	6,526	42,958	6·58
ide Bay	2,918	370	97	473	54	3,912	24,364	6·23
owns	1,057,614	1,458,471	337,042	153,635	19,564	3,026,326	22,799,166	7·53
aranoa	1,751,120	1,361,769	456,171	349,968	36,874	3,955,902	30,745,288	7·77
outh Western ..	2,006,559	959,599	452,286	314,748	58,192	3,791,384	27,851,399	7·35
otal South Queensland ..	4,822,768	3,781,216	1,246,295	818,984	114,787	10,784,050	81,463,175	7·55
ort Curtis	48,890	33,459	6,005	5,581	883	94,818	649,724	6·85
entral Western	3,224,656	2,051,403	806,236	579,958	97,192	6,759,445	49,095,031	7·26
ar Western	1,231,991	581,025	290,001	212,612	34,703	2,350,332	17,032,225	7·25
otal Central Queensland	4,505,537	2,665,887	1,102,242	798,151	132,778	9,204,595	66,776,980	7·25
dgecumbe	1,935	499	332	35	24	2,825	15,073	5·34
ockingham	548	8	..	32	18	606	3,985	6·58
eninsula	..	..	..	..	..	..	..	..
orth Western	1,762,483	1,043,815	407,495	341,419	46,477	3,601,689	25,468,864	7·07
otal North Queensland ..	1,764,966	1,044,322	407,827	341,486	46,519	3,605,120	25,487,922	7·07
Total Queensland ..	11,093,271	7,491,425	2,756,364	1,958,621	294,084	23,593,765	173,728,077	7·36
Dead Wool							97,184	
Fellmongered and Exported on Skins							5,633,328	
Total Wool Production							179,458,589	
Gross Value in Brisbane Market							£8,195,275	

Note.—Scoured wool has been converted into its greasy equivalent on the basis of $2\frac{1}{5}$ lb. of greasy = 1 lb. scoured.

Table No. 16.

WOOL PRODUCTION—QUEENSLAND, 1929-1938.

Year.	Sheep Shorn.						Wool Clip.	Wool per Fleece.	Total Production.		
	Ewes.	Wethers.	Weaners and Hoggets.	Lambs.	Rams.	Total.			Quantity.	Gross Value.	Value per lb.
	No.	No.	No.	No.	No.	No.	Lb. Greasy.	Lb. Greasy.	Lb. Greasy.	£	*d.*
29 *a* ..	10,047,529	5,945,106	2,540,116	1,928,720	271,583	20,733,054	155,967,030	7·52	161,087,873	6,886,506	10·26
30 *a* ..	10,775,618	6,410,475	3,064,178	2,241,266	286,644	22,778,181	174,600,451	7·67	182,061,407	7,039,708	9·28
31 *a* ..	11,370,193	6,476,985	2,931,350	2,121,948	283,229	23,183,705	176,142,684	7·60	184,716,462	5,957,105	7·74
32 *a* ..	11,312,100	6,528,796	2,695,198	1,589,980	281,785	22,407,859	173,682,186	7·75	185,833,546	7,340,425	9·48
33 *a* ..	10,639,910	6,375,958	1,961,914	1,537,537	261,001	20,776,320	160,874,165	7·74	169,989,516	10,227,703	14·44
34 *a* ..	11,104,557	6,571,673	2,555,831	2,112,502	265,154	22,609,717	166,452,800	7·36	174,088,413	7,587,353	10·46
35 *a* ..	9,627,905	6,218,579	1,607,419	1,054,527	255,987	18,764,417	136,893,630	7·30	142,793,328	8,287,963	13·93
36 ..	9,365,485	5,949,750	1,317,910	1,584,900	253,403	18,471,448	146,839,941	7·95	153,766,368	9,155,506	14·29
37 ..	9,926,112	6,038,625	3,262,964	2,202,962	279,766	21,710,429	169,152,803	7·79	174,751,280	10,390,420	14·27
38 ..	11,093,271	7,491,425	2,756,364	1,958,621	294,084	23,593,765	173,728,077	7·36	179,458,589	8,195,275	10·96

a Prior to 1936 figures refer to financial years ended 30th June, following.

Table No. 17.

WOOL SOLD IN BRISBANE MARKET, 1930–1939.

Year Ended 30th June.	No. of Sales.	No. of Bales Sold.			Weight Sold.		Amount Realised. £	Average Price Per Lb.		No. of Bales Held in Store Unsold at 30th June.
		Greasy.	Scoured.	Total.	Greasy. Lb.	Scoured. Lb.		Greasy. d.	Scoured. d.	
1930	10	377,730	33,103	410,833	122,773,424	6,744,969	5,765,673	10·26	18·42	65,023
1931	10	427,167	29,872	457,039	139,749,813	6,171,041	5,758,105	9·28	13·78	23,677
1932	11	408,417	37,660	446,077	131,610,148	7,691,122	4,650,292	7·74	12·71	40,119
1933	10	436,385	64,137	500,522	141,636,469	13,387,762	6,503,358	9·48	16·26	7,896
1934	7	302,938	50,098	353,036	97,302,028	10,469,300	7,453,650	15·51	26·69	102,097
1935	13	490,804	60,135	550,939	156,152,802	12,149,794	7,696,254	10·38	18·59	12,392
1936	8	347,486	39,084	386,570	108,530,704	8,014,633	7,060,529	13·93	22·73	24,159
1937	10	456,324	35,942	492,266	143,867,941	7,227,028	10,690,878	16·51	26·41	6,541
1938	11	451,353	32,208	483,561	141,849,963	6,423,510	7,626,056	11·98	20·35	25,814
1939	11	500,711	37,376	538,087	159,227,200	7,480,570	7,575,510	10·57	18·13	15,025

Table No. 18.

WOOL EXPORTS AND MANUFACTURE—QUEENSLAND, 1930–1939.

Year Ended 30th June.	Oversea Exports.						Scoured Wool Used in Queensland Factories.		Total Recorded Disposals. *c*
	Greasy Wool.		Scoured Wool.		Wool on Skins (Greasy)				
	Lb.	£	Lb.	£	Lb.	£ *a*	Lb.	£ *b*	Lb. (Greasy).
1930	122,023,953	5,898,865	10,911,832	1,015,954	3,350,919	143,252	572,237	43,919	150,257,060
1931	146,129,752	6,005,219	10,890,695	669,823	3,361,817	129,990	440,756	25,307	174,043,084
1932	149,541,226	5,367,646	14,198,049	795,779	3,065,791	98,872	541,451	28,674	184,542,650
1933	142,716,884	5,359,620	17,193,918	1,055,563	2,355,619	93,047	794,559	53,831	184,047,596
1934	128,534,115	8,094,432	18,716,446	1,879,241	1,542,927	99,712	796,547	88,583	172,355,258
1935	137,837,068	6,047,655	17,424,690	1,322,716	1,724,744	74,595	682,367	52,855	178,793,829
1936	109,839,914	6,603,031	14,334,775	1,267,637	1,162,631	67,481	650,142	61,574	143,469,915
1937	129,103,867	9,040,128	11,060,586	1,130,124	1,657,242	114,004	713,536	78,519	156,271,746
1938	142,782,644	8,297,012	11,479,889	1,094,768	2,438,602	121,727	689,072	58,428	171,587,369
1939	160,043,723	7,577,930	12,493,633	943,631	1,849,590	81,459	583,714	44,095	190,227,609

a Estimated value at Brisbane Market Price for Greasy Wool.

b Estimated value at Brisbane Market Price for Scoured Wool

c This column does not include Queensland wool (including wool on skins) exported to other States as complete records are not available. The quantity of wool (excluding wool on skins) sent by road and rail to New South Wales in 1938–39 was 3,262,036 lb. (expressed as greasy) valued at £147,274. Recorded disposals may include some wool the produce of other States as Imports from New South Wales and South Australia by road and rail for the same year amounted to 2,373,248 lb., valued at £104,726.

Brisbane,
1st May, 1940.

COLIN CLARK,
Government Statistician.

By Authority: ARTHUR HENRY TUCKER, Government Printer, Brisbane.

1939.

QUEENSLAND.

ANNUAL REPORT

OF THE

GOVERNMENT STATISTICIAN

ON

Agricultural and Dairying Production

FOR

The Year 1938

BRISBANE:
BY AUTHORITY: ARTHUR HENRY TUCKER, GOVERNMENT PRINTER.

1939.

QUEENSLAND.

Report of the Government Statistician on Agricultural and Dairying Production for the Year 1938.

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AGRICULTURAL AND DAIRYING PRODUCTION.

Table No. 1.

PROGRESS OF THE DAIRYING INDUSTRY.

Year.	Dairying Establishments, Exclusive of Factories.	Dairy Cows.				Production of Butter.	Production of Cheese.
		In Milk.	Dry.	Heifers within three months of milking.	Total.	Lb.	Lb.
1890	..	..	..	..	..	2,000,000*a*	170,240*a*
1895	..	..	..	..	..	3,719,523	1,841,799
1900	..	..	..	..	..	8,680,389	1,984,705
1905	..	..	..	..	..	20,319,976	2,682,089
1909	15,279	228,497	105,342	..	333,839	..	..
1910	16,079	262,788	102,656	..	365,444	31,258,333	4,146,661
1911	16,225	237,997	119,098	..	357,095	27,858,535	3,718,257
1912	16,579	267,847	107,813	..	375,660	30,307,339	3,947,615
1913	17,866	285,403	106,036	..	391,439	35,199,387	5,395,050
1914	18,029	288,334	98,977	..	387,311	37,230,240	7,931,869
1915	17,876	218,511	116,732	..	335,243	25,456,714	4,383,410
1916	18,410	247,855	95,456	..	343,311	28,967,279	8,495,825
1917	19,404	303,133	96,375	..	399,508	38,930,690	11,142,114
1918	19,313	255,039	126,466	..	381,505	32,371,575	8,636,700
1919	18,952	211,331	161,815	..	373,146	26,213,514	8,296,318
1920	20,457	335,026	113,608	..	448,634	40,751,373	11,512,262
1921	21,695	423,251	130,957	..	554,208	60,923,194	15,200,527
1922	21,931	418,351	145,332	..	563,683	53,785,599	10,560,316
1923	22,019	357,203	155,326	..	512,529	40,659,634	7,221,355
1924	22,599	433,531	151,355	..	584,886	58,187,954	11,093,886
1925	22,581	463,436	147,900	..	611,426	70,748,646	14,242,721
1926	22,451	397,606	157,913	55,708	611,227	50,991,985	8,740,355
1927	22,547	436,337	139,970	69,009	645,316	62,552,917	12,233,520
1928	22,457	492,405	144,562	33,838	670,805	73,820,292	15,047,825
1929	22,763	507,100	142,477	31,000	680,577	77,483,845	13,229,337
1930	23,270	546,643	147,385	30,295	724,323	90,377,751	14,249,173
1931	24,016	590,656	152,668	31,977	775,301	100,565,158	12,261,457
1932	24,591	586,995	173,557	32,391	792,943	96,317,201	11,157,781
1933	25,363	673,544	164,978	38,887	877,409	114,032,603	13,941,728
1934	26,102	729,821	172,932	36,501	939,254	136,793,670	13,531,480
1935	26,618	732,002	186,764	36,980	955,746	119,124,711	10,018,788
1936	29,852	649,422	229,996	226,675*b*	1,106,093	87,474,757*c*	7,789,890*c*
1937	31,149	701,258	225,055	59,545	985,858	118,244,260*c*	11,963,445*c*
1938	31,199	787,795	209,328	53,446	1.050,569	157,625,746*c*	15.768,543*c*

a Estimated. *b* *All* heifers. Estimated number intended for milking, 35,397. *c* Includes figures for factory production for year ended 30th June, following. Value of butter, cheese and milk produced in 1937-38 £8,140,000.

Table No. 2.

1937.—CLASSIFICATION OF DAIRY ESTABLISHMENTS (NOT FACTORIES) ACCORDING TO NUMBER OF DAIRY COWS (INCLUDING HEIFERS INTENDED FOR MILKING).

(*This classification not made for* 1938.)

Division.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 29.	30 to 49.	50 to 99.	100 and Upwards.	Total.
Moreton	1,385	511	699	949	1,685	2,123	1,511	317	9,180
Wide Bay	910	506	314	373	913	1,888	2,005	431	7,340
Downs	1,237	592	499	522	970	1,364	1,030	199	6,413
Maranoa	168	118	53	20	44	76	68	13	560
South-Western	28	41	24	10	11	8	1	..	123
Total South Queensland	3,728	1,768	1,589	1,874	3,623	5,459	4,615	960	23,616
Port Curtis	225	149	107	117	282	727	738	204	2,549
Central-Western	163	98	63	20	31	14	8	..	397
Far-Western	28	25	15	2	3	2	1	..	76
Total Central Queensland	416	272	185	139	316	743	747	204	3,022
Edgecumbe	1,262	506	182	77	94	80	88	18	2,307
Rockingham	1,078	197	70	38	107	287	273	37	2,087
Peninsula	4	3	1	3	2	..	..	..	13
North-Western	33	26	14	7	10	5	8	1	104
Total North Queensland	2,377	732	267	125	213	372	369	56	4,511
Total State	6,521	2,772	2,041	2,138	4,152	6,574	5,731	1,220	31,149

For the Petty Sessions Districts in each Division see Table No. 28.

Table No. 3.

BUTTER AND CHEESE EXPORTED OVERSEA FOR FIVE YEARS (AUSTRALIAN PRODUCE ONLY).

Year.	Butter.			Cheese.		
	Quantity Exported Oversea.	Value.	Value per lb.	Quantity Exported Oversea.	Value.	Value per lb.
	Lb.	£	*s.* *d.*	Lb.	£	*s.* *d.*
1934–35	102,133,794	3,676,486	0 8¾	7,818,720	162,384	0 5
1935–36	76,230,350	3,811,709	1 0	3,480,608	83,176	0 5¾
1936–37	53,885,011	3,091,504	1 1¼	1,767,107	50,837	0 7
1937–38	75,061,449	4,534,924	1 2½	5,780,882	158,020	0 6½
1938–39	127,546,051	7,523,409	1 2¼	9,488,519	242,799	0 6¼

Table No. 4.

DAIRYING INDUSTRY IN PETTY SESSIONS DISTRICTS DURING THE YEAR 1938 (a).

Division.	Total Milk Obtained.	How Utilised.						Establishments.			Dairy Cattle.			Average per Cow.	Butter Made.			Cheese Made.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	Heifers.		At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	No.	Gallons.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton Division.																				
Brisbane (North) ..	3,361,733	92,713	..	154,751	823,919	2,290,350	..	618	..	..	9,803	2,587	512	271	..	40,849	40,849	..	..	..
Brisbane (South) ..	1,219,014	24,486	..	53,093	166,888	974,547	..	200	..	..	3,355	895	90	287	..	10,764	10,764	..	..	..
Beaudesert	10,342,867	160,409	..	152,708	9,670,069	359,681	..	599	1	..	28,740	6,949	1,713	290	4,600,358	75,148	4,675,506	..	..	..
Caboolture	1,386,471	24,994	10,000	43,488	1,173,212	134,777	..	206	1	..	4,384	1,075	277	254	3,383,298	12,253	3,395,551	..	10,000	10,000
Cleveland	148,155	14,398	..	70,014	36,526	27,217	..	176	..	..	475	204	49	218	..	5,599	5,599	..	..	..
Crow's Nest	4,639,728	123,478	20	74,966	4,413,901	27,363	..	397	1	..	11,998	2,469	565	321	2,298,914	57,839	2,356,753	..	20	20
Dugandan	6,318,802	141,189	..	123,617	5,984,170	69,826	..	651	1	..	17,670	3,166	625	303	4,750,681	67,918	4,818,599	..	..	..
Esk	1,840,835	42,638	..	34,839	1,735,398	27,960	..	195	1	..	5,967	1,343	365	252	2,849,072	18,810	2,867,882	..	..	..
Gatton	3,390,704	129,412	..	137,540	3,082,859	40,760	133	507	2	..	9,865	2,045	375	285	3,113,465	62,213	3,175,678	2,880[b]	..	2,880
Harrisville	3,454,817	98,608	..	74,485	3,137,636	144,088	..	396	..	..	10,108	1,733	337	292	..	47,569	47,569	..	..	..
Ipswich	1,588,952	33,798	..	41,569	1,244,083	269,502	..	222	1	..	4,783	1,248	265	263	5,016,010	16,188	5,032,198	..	..	..
Kilcoy	2,790,990	51,244	..	34,802	2,702,094	2,850	..	140	.	..	7,305	2,141	575	295	.	24,183	24,183	..	..	..
Laidley	3,238,991	99,169	..	105,531	2,983,567	50,724	..	422	1	..	8,531	1,522	318	322	2,145,168	48,368	2,193,536	..	..	..
Logan	3,106,946	96,613	..	100,239	2,621,502	288,592	..	517	1	..	9,602	2,373	428	259	7,029,400	44,837	7,074,237	..	..	..
Lowood	2,468,151	57,526	..	76,762	2,288,245	45,618	..	297	1	..	6,196	1,138	220	337	796,105	26,897	823,002	..	..	..
Marburg	2,080,065	46,882	..	39,503	1,929,908	63,772	..	237	..	..	5,073	788	212	355	..	21,672	21,672	..	..	..
Maroochy	8,109,375	231,289	300	276,525	7,507,733	93,528	..	1,224	2	..	25,872	4,996	1,468	263	5,291,144	107,658	5,398,802	..	200	200
Redcliffe	3,382,309	47,005	..	75,578	1,545,295	1,714,431	..	351	1	..	10,951	2,875	675	245	456,717	22,543	479,260	..	..	..
Rosewood	3,362,524	79,738	..	64,656	2,977,456	240,674	..	365	..	..	9,908	1,993	409	283	..	36,727	36,727	..	..	..
Southport	7,360,148	113,079	..	124,788	6,279,312	842,969	..	521	..	..	22,424	4,743	1,214	271	..	55,208	55,208	..	..	..
Toogoolawah ..	4,219,083	95,816	..	69,970	4,043,697	9,600	..	335	..	..	12,061	2,804	642	284	..	45,864	45,864	..	..	..
Woodford	4,500,783	98,692	..	74,039	4,207,176	120,876	..	286	1	..	12,504	2,633	646	297	2,367,569	48,013	2,415,582	..	..	..
Wynnum	232,025	8,061	..	24,900	10,659	188,405	..	93	..	..	725	202	37	250	..	3,310	3,310	..	..	..
Oakey–Cooyar ..	1,915,211	48,182	..	31,692	1,813,837	21,500	..	133	..	..	4,808	1,071	318	326	..	22,826	22,826	..	..	..
Toowoomba–Helidon	2,874,162	72,044	..	56,814	2,741,474	3,830	..	278	..	..	6,846	1,608	364	340	..	32,355	32,355	..	..	..
Total Moreton ..	87,332,841	2,031,463	10,320	2,116,869	75,120,616	8,053,440	133	9,366	15	..	249,954	54,601	12,699	287	44,097,901	955,611	45,053,512	2,880	10,220	13,100
Wide Bay Division.																				
Biggenden	5,731,085	105,069	..	74,864	5,121,889	16,450	412,813	359	1	2	16,851	4,487	1,163	269	3,152,841	50,810	3,203,651	460,831	..	460,831
Bundaberg	3,340,721	246,583	50	205,867	2,681,322	206,899	..	888	1	..	11,556	5,010	1,311	202	2,510,497	108,394	2,618,891	..	60	60
Childers	493,259	45,905	..	62,359	368,791	16,204	..	206	..	..	1,909	920	193	174	..	20,272	20,272	..	..	..
Eidsvold	2,377,986	43,403	..	47,829	2,263,694	23,060	..	177	..	..	6,810	1,935	441	272	..	19,980	19,980	..	..	..
Gayndah	9,711,396	150,633	..	145,512	9,371,102	44,149	..	626	2	..	26,995	7,562	2,133	281	6,839,968	73,511	6,913,479	..	..	..
Gin Gin	1,561,330	103,360	..	82,467	1,361,261	14,242	..	293	..	..	5,680	1,828	554	208	..	47,075	47,075	..	..	..
Gympie	22,307,356	346,940	..	333,272	21,422,108	205,036	..	1,603	3	..	65,633	14,190	3,714	279	13,802,595	165,504	13,968,099	..	..	..
Kilkivan	1,707,819	37,400	..	28,135	1,641,974	310	..	133	..	..	4,128	1,553	424	301	.	18,579	18,579	..	..	..
Maryborough ..	2,161,043	133,656	..	109,770	1,704,113	213,504	..	523	1	..	7,361	2,979	541	209	1,404,742	62,125	1,466,867	..	..	..
Mount Perry ..	266,372	12,018	..	13,277	239,565	1,512	..	46	..	..	950	268	78	219	..	5,896	5,896	..	..	..
Nanango	12,658,751	280,649	..	200,740	12,027,846	149,516	..	971	2	..	33,680	8,285	1,944	302	9,488,371	136,052	9,624,423	..	..	..
Tiaro	4,009,245	102,260	..	81,470	3,807,848	17,667	..	374	..	..	12,545	3,657	1,052	247	..	48,396	48,396	..	..	..
Wienholt	17,319,901	336,059	..	279,984	16,600,977	102,881	..	1,160	3	..	45,977	10,340	2,951	308	11,175,770	164,420	11,340,190	..	..	..
Total Wide Bay ..	83,646,264	1,943,935	50	1,665,546	78,612,490	1,011,430	412,813	7,359	13	2	240,075	63,014	16,499	276	48,374,784	921,014	49,295,798	460,831	60	460,891
Downs Division.																				
Allora..	2,713,734	71,625	..	85,392	2,323,096	61,784	171,837	336	1	2	5,852	773	305	410	1,556,371	33,256	1,589,627	219,789	..	219,789
Chinchilla	5,708,611	85,959	..	94,122	5,517,432	11,098	..	376	1	..	16,168	4,117	1,375	281	3,091,588	40,241	3,131,829	..	..	..
Clifton	4,519,060	131,054	..	110,381	3,754,002	9,233	514,390	514	1	3	9,268	1,393	419	424	1,610,172	63,415	1,673,587	560,170	..	560,170
Condamine	2,029,874	66,900	..	49,952	1,908,822	4,200	..	257	1	..	7,711	1,927	668	211	1,772,289	31,638	1,803,927	..	..	..
Dalby..	12,241,871	268,955	..	224,148	10,369,272	42,800	1,336,696	919	2	5	31,442	7,862	1,787	311	7,725,147	125,871	7,851,018	1,954,799	..	1,954,799
Goondiwindi ..	245,294	18,624	..	38,377	170,098	18,195	..	99	..	..	801	336	79	216	..	8,108	8,108	..	..	..
Inglewood	1,398,845	29,029	..	37,113	1,326,408	6,295	..	137	..	..	3,326	1,171	237	311	..	12,997	12,997	..	..	..
Killarney	2,303,050	57,810	..	51,478	2,151,572	12,112	30,078	218	1	..	4,478	1,193	338	406	1,633,988	28,214	1,662,202	..	..	..
Oakey	14,845,371	210,009	..	197,045	10,618,320	41,632	3,778,365	987	2	15	32,744	6,233	1,282	381	8,220,681	100,916	8,321,597	4,460,685	..	4,460,685
Pittsworth	9,447,823	138,715	..	161,712	5,582,994	6,713	3,557,689	647	1	12	15,438	3,068	772	439	1,694,277	66,622	1,760,899	5,143,647	..	5,143,647
Stanthorpe	324,400	73,822	50	171,141	63,126	16,261	..	546	..	..	1,269	629	79	171	..	33,155	33,155	..	40	40
Texas	490,849	12,904	..	31,665	441,524	4,756	..	83	1	..	1,765	331	78	234	281,076	5,942	287,018	..	..	..
Toowoomba	6,089,504	139,244	..	139,141	4,200,302	307,567	1,303,250	632	1	9	13,104	2,331	700	395	6,038,606	67,636	6,106,242	2,409,415	..	2,409,415
Warwick	4,873,845	149,569	..	135,702	3,944,349	230,373	413,852	644	1	4	10,715	1,826	477	389	3,481,023	71,294	3,552,317	536,887	..	536,887

DAIRYING INDUSTRY IN PETTY SESSIONS DISTRICTS DURING THE YEAR 1938 (*a*)—*continued.*

Division.	Total Milk Obtained.	How Utilised.						Establishments.			Dairy Cattle.			Average per Cow.	Butter Made.			Cheese Made.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	Heifers.		At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	No.	Gallons.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Maranoa Division.																				
Roma	2,035,951	108,583	50	121,046	1,782,157	24,115	..	341	1	..	6,938	2,727	769	211	1,284,101	43,539	1,327,640	..	50	50
Other	284,504	26,835	..	63,152	162,345	32,172	..	150	..	..	1,474	622	107	136	..	8,847	8,847	..	..	..
Total Maranoa ..	2,320,455	135,418	50	184,198	1,944,502	56,287	..	491	1	..	8,412	3,349	876	197	1,284,101	52,386	1,336,487	..	50	50
Total South-Western	97,540	9,550	..	36,220	..	51,770	..	74	..	..	515	389	43	108		2,410	2,410	..	..	..
Total South Queensland	*240,629,231*	*5,574,585*	*10,470*	*5,530,202*	*208,048,925*	*9,945,946*	*11,519,103*	*23,685*	*42*	*52*	*656,037*	*154,543*	*38,713*	*297*	*130,862,004*	*2,620,726*	*133,482,730*	*15,749,103*	*10,370*	*15,759,473*
Port Curtis Division.																				
Banana	543,801	15,042	..	23,647	504,291	821	..	87	..	..	1,874	667	311	214	..	7,133	7,133	..	..	..
Gladstone	5,705,105	163,094	..	118,807	5,394,116	29,088	..	536	1	..	19,100	8,209	2,142	209	3,522,333	74,603	3,596,936	..	..	..
Monto	7,826,647	128,584	..	101,124	7,539,539	57,400	..	468	1	..	21,733	6,532	1,912	277	4,802,105	62,488	4,864,593	..	..	..
Mount Morgan ..	9,306,474	152,103	595	154,138	8,912,594	87,044	..	767	2	..	26,990	8,925	3,165	259	6,488,230	73,470	6,561,700	..	595	595
Rockhampton ..	5,273,475	210,942	..	225,822	4,365,046	471,665	..	684	1	..	15,925	7,969	2,381	221	2,718,606	99,673	2,818,279	..	..	..
St. Lawrence ..	54,186	20,168	..	21,579	5,733	6,706	..	44	..	..	284	111	16	137	..	7,640	7,640	..	..	..
Taroom	118,707	12,266	..	10,865	95,576	..	..	40	..	..	514	104	17	192	..	5,704	5,704	..	..	..
Total Port Curtis ..	28,828,395	702,199	595	655,982	26,816,895	652,724	..	2,626	5	..	86,420	32,517	9,944	242	17,531,274	330,711	17,861,985	..	595	595
Total Central-Western	340,629	93,944	110	141,744	..	104,831	..	314	..	..	2,024	1,350	258	101	..	30,030	30,030	..	110	110
Total Far Western ..	37,810	6,239	..	21,491	..	10,080	..	45	..	..	226	206	40	88	..	1,889	1,889	..	..	..
Total Cent. Queensland	*29,206,834*	*802,382*	*705*	*819,217*	*26,816,895*	*767,635*	..	*2,985*	*5*	..	*88,670*	*34,073*	*10,242*	*238*	*17,531,274*	*362,630*	*17,893,904*	..	*705*	*705*
Edgecumbe Division.																				
Ayr	226,925	9,480	..	114,204	16,560	86,681	..	352	..	..	1,103	749	119	123	..	4,350	4,350	..	..	..
Bowen	112,614	18,972	..	33,558	26,894	33,190	..	140	..	..	550	564	123	101	..	6,799	6,799	..	..	..
Charters Towers ..	119,468	27,230	..	23,690	500	68,048	..	71	..	..	687	440	121	106	..	10,813	10,813	..	..	..
Collinsville	7,852	3,500	..	3,518	..	834	..	6	..	..	32	45	8	102	..	1,300	1,300	..	..	..
Mackay	2,340,431	261,844	450	549,657	1,255,103	273,377	..	1,444	1	..	9,667	5,687	1,279	152	794,958	116,011	910,969	..	225	225
Proserpine	145,533	18,812	..	47,044	65,080	14,597	..	222	..	..	904	488	193	105	..	8,404	8,404	..	..	..
Ravenswood ..	5,530	1,850	..	3,680	..	..	..	14	..	..	59	9	..	81	..	550	550	..	..	..
Townsville	369,899	8,749	..	31,999	28,409	300,742	..	95	..	..	1,523	1,290	191	131	..	5,022	5,022	..	..	..
Total Edgecumbe ..	3,328,252	350,437	450	807,350	1,392,546	777,469	..	2,344	1	..	14,525	9,272	2,034	140	794,958	153,249	948,207	..	225	225
Rockingham Division.																				
Atherton	7,636,452	159,259	8,030	169,202	7,157,175	142,786	..	633	2	..	18,793	6,116	1,584	307	4,289,426	74,585	4,364,011	..	8,030	8,030
Cairns	372,291	12,449	..	101,043	59,446	199,353	..	321	..	..	1,434	775	110	169	..	4,824	4,824	..	..	..
Cardwell	133,454	5,473	..	52,240	42,976	32,765	..	142	..	..	442	308	30	178	..	2,639	2,639	..	..	..
Chillagoe	405	..	..	405	..	..	..	2	..	..	4	..	..	101	..	..	..	..	..	..
Douglas	419,264	4,642	..	26,383	371,194	17,045	..	93	1	..	982	523	74	279	171,380	2,232	173,612	..	..	..
Herberton	1,053,231	28,176	..	27,418	983,388	14,249	..	108	1	..	2,583	918	129	301	560,002	11,442	571,444	..	..	..
Ingham	214,629	9,414	..	80,987	56,227	68,001	..	266	1	..	1,032	635	110	129	17,015	4,199	21,214	..	..	..
Innisfail	435,053	11,915	160	125,712	192,241	105,025	..	412	1	..	1,525	881	116	181	56,080	5,301	61,381	..	110	110
Mareeba	248,217	8,589	..	32,611	190,796	16,221	..	104	1	..	1,027	631	204	150	95,396	3,272	98,668	..	..	..
Total Rockingham	10,512,996	239,917	8,190	616,001	9,053,443	595,445	..	2,081	7	..	27,822	10,787	2,347	272	5,189,299	108,494	5,297,793	..	8,140	8,140
Total Peninsula ..	13,260	2,040	..	5,820	..	5,400	..	17	..	..	82	83	13	80	..	375	375	..	..	..
Total North-Western	101,505	7,905	..	33,831	..	59,769	..	87	..	..	659	570	97	83	..	2,737	2,737	..	..	..
Total North Queensland	*13,956,013*	*600,299*	*8,640*	*1,463,002*	*10,445,989*	*1,438,083*	..	*4,529*	*8*	..	*43,088*	*20,712*	*4,491*	*219*	*5,984,257*	*264,855*	*6,249,112*	..	*8,365*	*8,365*
Grand Total, 1938 ..	283,792,078	6,977,266	19,815	7,812,421	245,311,809	12,151,664	11,519,103	31,199	55	52	787,795	209,328	53,446	285	154,377,535	3,248,211	157,625,746	15,749,103	19,440	15,768,543
Grand Total, 1937 ..	214,418,865	7,090,062	21,316	7,819,510	179,522,403	11,580,973	8,384,601	31,149	57	53	701,258	225,055	59,545	231	114,941,221	3,303,039	118,244,260	11,942,225	21,220	11,963,445
Increase, 1938 ..	69,373,213	..	..	..	65,789,406	570,691	3,134,502	50	..	..	86,537	..	..	54	39,436,314	..	39,381,486	3,806,878	..	3,805,098
Decrease, 1938 ..	..	112,796	1,501	7,089	..	..	..	..	2	1	..	15,727	6,099	..	..	54,828	..	..	1,780	..

a The figures for factory production are for the year ended 30th June, 1939, and are complete. The rest of the table is compiled from returns sent in by farmers for the year 1938, and may be somewhat incomplete.

b Produced at a butter factory.

NOTE.—For names of Petty Sessions Districts in those Divisions where they are not specified *see* Table No. 28.

Table No. 5.

ACREAGE AND VALUE OF ALL AGRICULTURAL CROPS FOR THE YEARS 1937 AND 1938.

—	1937.		1938.	
	Acres.	Value.	Acres.	Value.
		£		£
Grain crops	563,544	1,518,330	648,136	1,863,914
Green forage	441,560	1,177,000	448,643	1,120,892
Hay and straw	73,629	628,714	65,732	581,687
Root crops	17,778	244,805	17,667	363,328
Sugar-cane	348,840	8,917,730	347,199	8,996,556
Fruit (including Vines)	34,104	1,083,671	35,658	1,246,610
All other	139,283	1,361,017	171,754	1,391,316
Total	1,618,738	14,931,267	1,734,789	15,564,303

Table No. 6.

IRRIGATION—AREA AND PRINCIPAL CROPS IRRIGATED DURING THE YEAR 1938.

Division and Petty Sessions District.	Number of Irrigators.	Total Area Irrigated.	Principal Crops Irrigated.					
			Sugar-cane.	Fruit and Vegetables.	Cotton.	Tobacco.	Fodder Crops.	Grain.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Moreton.								
Brisbane North	64	354	..	325	..	..	26	3
Brisbane South	70	287*a*	..	269	..	..	8	..
Beaudesert	14	164	..	6	..	..	135	23
Cleveland	168	968	..	964	..	..	4	..
Dugandan	77	937	..	665	..	..	264	8
Gatton	84	1,291	..	657	..	..	624	10
Harrisville	24	371	..	47	..	..	255	69
Ipswich	10	73	..	17	..	..	56	..
Laidley	50	1,030	..	267	..	..	763	..
Logan	81	219	..	213	..	..	6	..
Lowood	41	794	..	448	..	..	324	22
Rosewood	16	131	..	24	..	..	107	..
Toogoolawah	23	573	..	222	..	..	293	58
Wynnum	21	74	..	73	..	..	1	..
Toowoomba-Helidon	1	20	..	20	..	..	..	..
All Other Districts	55	267*b*	..	133	..	..	100	14
Total, Moreton	749	7,553*ab*	..	4,350	..	..	2,966	207
Wide Bay.								
Bundaberg	103	5,293	5,138	118	..	3	9	25
Eidsvold	3	80	..	64	..	..	16	..
Gayndah	21	256	..	243	..	..	13	..
Gympie	14	113	..	23	..	..	90	..
Maryborough	11	79	..	79	..	..	..	..
Tiaro	9	93	60	3	..	..	26	4
Wienholt	31	316	..	83	..	..	233	..
All Other Districts	17	207	177	22	3	..	5	..
Total, Wide Bay	209	6,437	5,375	635	3	3	392	29
Downs.								
Condamine	3	106	..	6	..	..	100	..
Goondiwindi	6	46	..	15	..	15	16	..
Inglewood	13	381	..	13	..	366	2	..
Stanthorpe	15	70	..	60	..	5	5	..
Texas	17	346	..	3	..	270	67	6
All Other Districts	39	108	..	64	..	..	44	..
Total, Downs	93	1,057	..	161	..	656	234	6
Maranoa	11	25	..	25	..	..	..	..
South-West	15	74	..	33	..	..	41	..
Port Curtis.								
Banana	25	811*c*	..	47	221	..	408	88
Gladstone	20	171	..	67	..	11	78	15
Mount Morgan	29	113	..	83	..	..	30	..
Rockhampton	85	445	..	305	..	..	134	6
All Other Districts	4	30	..	1	..	..	29	..
Total, Port Curtis	163	1,570*c*	..	503	221	11	679	109
Central West	23	96	..	93	..	..	3	..
Far West	3	8	..	8	..	..	..	..
Edgecumbe.								
Ayr	581	27,846	27,717	56	14	20	14	25
Bowen	129	970	70	728	5	9	158	..
Charters Towers	44	178	..	171	..	..	6	1
Mackay	49	1,950	1,946	4	..	..	..	..
Proserpine	3	143	143	..	..	..	..	..
Townsville	32	250	42	168	..	5	35	..
All Other Districts	6	12	..	12	..	..	..	..
Total, Edgecumbe	844	31,349	29,918	1,139	19	34	213	26
Rockingham.								
Atherton	9	39	..	21	..	..	15	3
Ingham	3	126	126	..	..	..	..	..
Mareeba	65	452*d*	..	51	..	391	5	..
All Other Districts	21	139	96	31	..	..	12	..
Total, Rockingham	98	756	222	103	..	391	32	3
Peninsula	1	2	..	2	..	..	..	..
North West	9	26	..	26	..	..	..	..
TOTAL, STATE, 1938	2,218	48,953*e*	35,515	7,078	243	1,095	4,560	380
TOTAL, STATE, 1937	2,184	49,154*f*	36,171	6,431	237	1,060	4,790	457

a Including 6 acres Nursery, 4 acres Roses.
b Including 20 acres Pasture.
c Including 47 acres Pasture.
d Including 5 acres Peanuts.
e Including 82 acres specified in Notes *a d*.
f Including 8 acres Arrowroot.

Table No. 7.

IRRIGATION—Return for 10 Years.

Year.	Acres Irrigated.	Year.	Acres Irrigated.
1929	26,282	1934	34,138
1930	26,947	1935	36,486 *a*
1931	28,414	1936	44,509 *a*
1932	31,409	1937	49,154
1933	29,363	1938	48,953

a Amended.

Table No. 8.

WHEAT.—Area and Produce of Wheat for Grain in Petty Sessions Districts.

Division and Petty Sessions District.	1936.			1937.			1938.		
	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.
Moreton.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.
Brisbane	20	9	0·45	8	..	..	..	..	..
Beaudesert				22	20	0·91	61	1,079	17·69
Caboolture	12	20	1·67			..	..	..	..
Crow's Nest	185	1,506	8·14	926	8,822	9·53	587	8,286	14·12
Dugandan	109	805	7·38	130	626	4·82	194	2,418	12·46
Gatton	293	365	1·25	184	290	1·58	88	690	7·84
Harrisville	104	420	4·04	59	..	..	..	..	..
Laidley	180	1,695	9·42	25	40	1·60	53	952	17·96
Rosewood				41	291	7·10	..	..	..
Toogoolawah	5	120	24·00	10	..	..	..	..	..
Oakey-Cooyar	250	726	2·90	334	4,183	12·52	199	3,092	15·54
Toowoomba-Helidon	76	105	1·38	1	9	9·00	4	60	15·00
All Other Districts	6	40	6·67	21	6	0·29	33	60	1·82
Total, Moreton	1,240	5,811	4·69	1,761	14,287	8·11	1,219	16,637	13·65
Wide Bay.									
Biggenden	15				..				
Eidsvold	21	..	..	7	..	..			
Gayndah	32	..	..	91	390	4·29	2	20	10·00
Gympie	15			..	.	.	.	..	..
Kilkivan	38	170	4·47	.	..	.	.	..	.
Mount Perry	12	..	..	..	..	..	..	..	..
Nanango	300	662	2·21	1,096	6,199	5·66	869	12,414	14·29
Wienholt	261	2,007	7·69	376	2,248	5·98	551	7,347	13·33
All Other Districts ..	3	..	..	9	..	..	5	40	8·00
Total, Wide Bay	697	2,839	4·07	1,579	8,837	5·60	1,427	19,821	13·89
Downs.									
Allora	22,786	203,802	8·95	30,450	480,148	15·77	34,386	822,978	23·93
Chinchilla	842	5,211	6·19	1,844	10,562	5·73	1,912	30,741	16·08
Clifton	36,287	253,923	6·99	48,180	434,527	9·02	47,513	953,490	20·07
Condamine	1,279	7,446	5·82	960	6,610	6·89	2,999	58,476	19·50
Dalby	28,638	215,248	7·52	48,924	748,643	15·30	84,534	1,790,491	21·18
Goondiwindi	378	830	2·20	16	60	3·75	603	5,343	8·86
Inglewood	1,151	2,539	2·21	919	5,209	5·67	2,608	27,605	10·58
Killarney	7,251	60,353	8·32	9,805	109,122	11·13	9,516	161,246	16·94
Oakey	52,439	361,692	6·90	67,786	602,073	8·88	78,481	1,453,431	18·52
Pittsworth	75,650	549,004	7·25	86,612	643,854	7·43	89,300	1,777,817	19·91
Stanthorpe	8	..	..	..	..	..	..	..	..
Texas	474	1,518	3·20	305	1,320	4·33	347	2,871	8·27
Toowoomba	10,928	67,439	6·17	18,572	165,471	8·91	18,903	328,639	17·39
Warwick	19,349	95,957	4·96	28,763	381,731	13·27	32,696	641,484	19·62
Total, Downs . ..	257,460	1,824,962	7·09	343,136	3,589,330	10·46	403,798	8,054,612	19·95
Maranoa.									
Mitchell	1,779	3,100	1·74	1,200	444	0·37	1,257	1,465	11·65
Roma	21,173	166,468	7·86	21,580	118,169	5·48	28,855	389,023	13·48
All Other Districts	5	..	..	2	..	..	70	300	4·29
Total, Maranoa	22,957	169,568	7·39	22,782	118,613	5·21	30,182	390,788	12·95
Port Curtis.									
Banana	702	7,918	11·28	1,647	9,990	6·07	1,042	28,146	27·01
Gladstone	15	..	..	9	5	0·56	8	15	1·88
Monto	101	300	2·97	46	1,188	25·83	100	2,700	27·00
Mount Morgan	460	4,530	9·85	1,952	7,155	3·67	4,101	68,434	16·69
Rockhampton	16	308	19·25	3	38	12·67	18	292	16·22
Taroom	..	..		..	..	..	102	2,142	21·00
Total, Port Curtis	1,294	13,056	10·09	3,657	18,376	5·02	5,371	101,729	18·94
Rockingham.									
Total, Rockingham..	.	..	..	20	..	..	20	149	7·45
Total, State	283,648	2,016,236	7·11	372,935*a*	3,749,443	10·05	442,017*b*	8,583,736	19·42

a Including 75,528 acres which failed to bear a crop.
b Including 17,800 acres which failed to bear a crop.

Table No. 9.

WHEAT TREATED in Queensland Flour Mills during the Years 1936–37 and 1937–38.

Year.	Flour Mills.	Workers. *a*	Wheat Treated.	Flour Made.		Meal Made.		Bran and Pollard.	
				Tons.	Value.	Tons.	Value.	Bushels.	Value.
	No.	No.	Bushels.		£		£		£
1936–37	10	347	3,957,385	82,423	1,047,409	4,041	50,222	3,322,334	248,810
1937–38	10	339	3,997,049	81,242	988,590	4,215	51,291	3,369,500	262,361

a Average over whole year.

Table No. 10.

MAIZE.—AREA AND PRODUCE OF MAIZE FOR GRAIN IN PETTY SESSIONS DISTRICTS.

Division and Petty Sessions District.	1936.				1937.				1938.			
	No. of Growers.	Area.	Produce.	Average per Acre.	No. of Growers.	Area.	Produce.	Average per Acre.	No. of Growers.	Area.	Produce.	Average per Acre.
MORETON.		Acres.	Bushels.	Bushels.		Acres.	Bushels.	Bushels.		Acres.	Bushels.	Bushels.
Brisbane (North) ..	60	174	3,747	21·53	52	154	2,482	16·12	43	120	2,022	16·85
Brisbane (South) ..	2	6	90	15·00	5	22	162	7·36	7	36	526	14·61
Beaudesert	271	3,822	76,419	19·99	383	3,736	69,377	18·57	441	4,653	109,499	23·53
Caboolture	23	72	1,564	21·72	29	77	1,915	24·87	24	69	1,616	23·42
Cleveland	3	9	60	6·67	3	2	65	32·50	1	1	30	30·00
Crow's Nest	312	6,127	102,669	16·76	284	5,207	35,117	6·63	342	5,915	99,825	16·88
Dugandan	449	5,571	96,141	17·26	429	5,108	71,749	14·05	571	7,523	186,227	24·75
Esk	96	944	12,303	13·03	105	1,181	16,045	13·59	128	1,232	20,452	16·60
Gatton	383	5,202	72,921	14·02	337	4,608	30,344	6·59	391	4,577	76,897	16·80
Harrisville	295	3,161	49,060	15·52	269	2,652	25,206	9·50	342	3,887	84,518	21·74
Ipswich	88	688	13,071	18·93	85	458	5,614	12·26	93	567	10,832	19·10
Kilcoy	105	795	18,070	22·73	101	737	15,093	20·48	104	790	18,598	23·54
Laidley	342	5,790	101,095	17·46	329	5,298	35,755	6·75	377	5,793	115,008	19·85
Logan	179	423	8,507	20·11	209	510	9,718	19·05	199	478	10,231	21·40
Lowood	220	3,635	43,252	11·90	202	2,185	25,688	11·76	241	3,470	59,468	17·14
Marburg	176	1,500	20,493	13·66	177	1,225	15,134	12·35	212	2,177	32,650	15·00
Maroochy	135	507	12,936	25·52	128	412	11,724	28·46	125	328	8,080	24·63
Redcliffe	51	192	5,041	26·25	69	258	5,662	21·95	64	252	5,493	21·80
Rosewood	221	2,028	29,959	14·77	253	2,308	26,445	11·46	262	2,453	47,380	19·32
Southport	146	560	15,175	27·10	124	650	18,486	28·44	146	643	17,048	26·51
Toogoolawah	210	2,566	41,151	16·04	250	3,451	62,447	17·99	278	3,522	68,587	19·47
Woodford	52	271	6,197	22·87	83	597	14,101	23·62	93	630	19,194	30·47
Wynnum	1	1	..	..	1	1	18	18·00	1	4	100	25·00
Oakey-Cooyar	107	1,559	26,857	17.23	88	1,134	6,685	5·90	101	1,514	25,847	17·07
Toowoomba-Helidon ..	153	1,047	12,434	11·87	155	1,129	12,044	10·67	159	977	15,242	15·60
Total, Moreton ..	4,080	46,650	769.212	16·49	4,150	43,210	517,076	11·97	4,745	51,611	1,035,370	20·06
WIDE BAY.												
Biggenden	142	733	10,439	14·24	185	944	12,348	13·08	125	617	9,236	14·97
Bundaberg	107	345	5,063	14·68	155	569	11,839	20·81	156	525	10,493	19·99
Childers	13	45	672	14·93	12	55	851	15·47	15	92	1,673	18·18
Eidsvold	53	440	2,009	4·57	54	592	2,773	4·68	46	321	3,245	10·11
Gayndah	223	2,393	18,470	7·72	223	2,410	20,039	8·31	217	2,299	35,197	15·31
Gin Gin	69	347	3,997	11·52	93	397	5,761	14·51	109	470	6,631	14·11
Gympie	374	2,002	56,603	28·27	453	2,510	59,492	23·70	501	2,557	69,398	27·14
Kilkivan	42	359	5,499	15·32	50	395	3,877	9·82	48	285	5,423	19·03
Maryborough	53	119	2,026	17·03	60	142	3,253	22·91	49	108	1,897	17·56
Mount Perry	13	28	269	9·61	11	31	452	14·58	13	27	240	8·89
Nanango..	740	20,101	381,890	19·00	599	18,583	118,488	6·38	727	19,727	340,025	17·24
Tiaro	96	353	6,523	18·48	87	468	7,885	16·85	97	433	10,876	25·12
Wienholt	863	20,323	375,471	18·47	908	23,626	347,621	14·71	898	20,042	305,014	15·22
Total, Wide Bay ..	2,788	47,588	868,931	18·26	2,890	50,722	594,679	11·72	3,001	47,503	799,348	16·83
DOWNS.												
Allora	229	7,660	115,603	15·09	236	6,834	85,462	12·51	213	6,042	107,171	17·74
Chinchilla	27	350	1,310	3·74	62	700	3,666	5·24	34	475	3,571	7·52
Clifton	348	12,372	182,325	14·74	280	9,380	77,712	8·28	331	11,502	208,908	18·16
Condamine	8	90	1,253	13·92	13	123	1,510	12·28	8	64	511	7·98
Dalby	117	1,835	9,272	5·05	108	1,431	12,683	8·86	82	1,007	8,177	8·12
Goondiwindi	3	12	80	6·67	2	6	48	8·00	2	8	24	3·00
Inglewood	11	223	333	1·49	17	133	670	5·04	6	37	284	7·68
Killarney	161	7,011	99,937	14·25	186	7,081	99,846	14·10	187	6,760	141,761	20·97
Oakey	363	7,856	75,292	9·58	277	5,913	21,231	3·59	392	7,404	78,909	10·66
Pittsworth	114	2,578	20,862	8·09	108	2,062	11,087	5·38	120	2,837	37,971	13·38
Stanthorpe	46	174	1,926	11·07	59	153	2,207	14·42	73	213	3,270	15·35
Texas	12	93	320	3·44	20	178	2,060	11·57	9	44	473	10·75
Toowoomba	333	6,068	80,458	13·26	232	3,413	19,134	5·61	368	6,249	100,152	16·03
Warwick..	328	14,184	129,695	9·14	325	11,453	89,679	7·83	334	10,535	161,868	15·36
Total, Downs.. ..	2,100	60,506	718,666	11·88	1,925	48,860	426,995	8·74	2,159	53,177	853,050	16·04
MARANOA	17	86	503	5·85	13	70	831	11·87	9	75	239	3·19
PORT CURTIS.												
Banana	3	18	150	8·33	4	152	1,383	9·10	3	18	210	11·67
Gladstone	143	938	15,827	16·87	152	1,136	20,716	18·24	119	883	7,428	8·41
Monto	182	2,030	27,992	13·79	208	2,836	40,427	14·25	211	2,745	30,101	10·97
Mount Morgan	140	1,396	20,542	14·71	172	2,327	18,126	7·79	98	1,491	6,681	4·48
Rockhampton	143	775	13,278	17·14	152	1,251	18,341	14·66	108	936	6.364	6·80
St. Lawrence	8	33	719	21·79	5	21	450	21·43	6	33	301	9·12
Taroom	4	22	290	13·18	3	29	165	5·69	..	..	..	..
Total, Port Curtis ..	623	5,212	78,798	15·12	696	7,752	99,608	12·85	545	6,106	51,085	8·37
CENTRAL WESTERN ..	7	32	184	5·75	3	7	44	6·29	..	..	..	..
EDGECUMBE	74	193	2,158	11·18	67	173	2;981	17·23	89	367	6,993	19·05
ROCKINGHAM												
Atherton	349	20,397	697,020	34·17	370	22,410	960,637	42·87	391	23,749	969,063	40·80
All Other Districts ..	69	468	11,387	24·33	89	983	24,108	24·52	56	750	17,103	22·80
Total, Rockingham ..	418	20,865	708,407	33·95	459	23,393	984,745	42·10	447	24,499	986,166	40·25
PENINSULA	8	50	995	19·90	10	54	1,469	27·20	10	77	1,173	15·23
NORTH WESTERN ..	6	84	960	11·43	1	2	30	15·00	..	..	..	..
Total, State	10,121	181,266	3,148,814	17·37	10,214	174,243	2,628,458	15·09	11,005	183,415	3,733,424	20·36

Table No. 11.

BARLEY.—Area and Produce in Petty Sessions Districts.

Petty Sessions District.	Malting Grain.				Other Varieties Grain.			
	Acres.		Bushels.		Acres.		Bushels.	
	1937.	1938.	1937.	1938.	1937.	1938.	1937.	1938.
Allora	429	534	6,758	7,613	457	681	7,553	13,028
Atherton	40	..	400	..	..	..	..	..
Clifton	2,440	4,406	38,349	84,832	363	828	5,546	14,575
Crow's Nest ..	80	73	1,709	1,318	110	61	2,203	1,008
Dalby	320	222	3,453	8,429	128	128	2,341	2,676
Dugandan	8	12	120	270	3	1	42	12
Inglewood	7	3	30	36	10	36	30	290
Killarney	80	64	364	993	158	52	1,695	593
Monto	..	..	..	..	10	..	30	..
Mount Morgan ..	..	..	..	..	10	21	27	523
Nanango	18	49	135	791	4	142	90	1,373
Oakey { Cooyar ..	17	42	375	705	53	25	1,029	330
Oakey { Oakey ..	560	893	5,629	12,246	333	615	4,157	9,220
Pittsworth	613	1,945	7,929	35,737	260	457	2,698	7,239
Texas	..	..	..	..	60	..	720	..
Toowoomba ..	894	1,054	14,706	17,867	253	264	2,883	4,772
Warwick	400	845	4,571	11,756	434	320	4,509	5,539
Wienholt	..	115	..	732	86	2	870	36
All Other Districts	17	47	70	300	..	52	..	790
Total, State ..	5,923	10,304	84,598	183,625	2,732	3,685	36,423	62,004

Table No. 12.

COTTON—Area and Produce in Petty Sessions Districts.

Petty Sessions District.	Area.					Produce (Seed Cotton).				
	1934.	1935.	1936.	1937.	1938.	1934.	1935.	1936.	1937.	1938.
	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.	Lb.	Lb.	Lb.
Ayr	10	..	..	7	125	111	..	..	1,391	19,783
Banana	1,374	1,593	960	841	1,621	1,354,872	541,693	431,404	227,231	434,410
Biggenden	173	288	285	290	415	60,004	106,449	85,301	54,425	161,543
Bowen	23	17	31	57	69	22,681	6,434	5,078	22,923	15,777
Bundaberg	27	38	22	25	78	1,290	10,716	3,541	8,904	18,842
Cardwell	4	6	6	6	14	2,071	4,429	2,404	3,252	3,806
Childers	9	68	61	54	125	3,060	26,881	17,949	11,805	51,761
Chinchilla	2	112	26	54	338	300	28,457	4,395	3,055	63,429
Clermont	128	71	81	50	..	31,326	4,170	15,627	6,755	..
Clifton	..	30	..	5	5	..	7,159	..	2,895	2,984
Condamine	172	74	294	425	672	25,423	35,059	102,625	55,053	137,304
Dalby	18	101	100	221	444	9,700	26,334	29,176	34,490	110,592
Dugandan	31	57	50	48	97	11,286	22,708	23,067	10,877	36,928
Eidsvold	1,607	1,842	1,504	1,144	1,570	983,307	559,982	380,924	104,461	870,290
Emerald	51	133	14	9	..	15,495	15,400	3,199	3,256	..
Esk	41	57	27	30	90	9,189	35,706	8,607	5,397	19,666
Gatton	224	273	249	222	459	132,231	119,214	108,699	63,665	146,808
Gayndah	2,860	4,261	5,533	4,851	6,499	2,626,323	1,803,475	1,382,383	371,814	1,476,784
Gin Gin	90	12	59	46	69	14,998	8,315	18,982	22,564	40,663
Gladstone	328	278	262	270	239	270,642	79,186	81,801	54,298	40,935
Harrisville	52	14	17	37	69	22,714	5,127	8,053	6,552	18,046
Ipswich	32	120	43	23	109	17,308	35,179	18,932	4,858	33,095
Kilkivan	32	49	45	28	31	22,802	13,663	16,323	4,730	9,263
Laidley	157	103	98	103	184	40,928	38,523	46,905	22,427	46,551
Lowood	106	37	69	95	191	32,818	23,515	33,255	17,653	49,623
Mackay	2	113	81	42	27	500	22,431	13,389	3,165	2,669
Marburg	59	14	25	24	43	11,625	5,967	12,788	7,124	15,950
Mareeba	58	146	115	87	30	21,225	39,628	8,512	15,151	4,313
Maryborough ..	11	58	5	32	60	856	11,636	1,389	10,633	15,508
Monto	5,966	7,898	8,357	3,981	4,234	5,736,304	3,044,948	2,509,953	552,616	1,150,318
Mount Morgan ..	27,226	33,313	39,725	35,086	40,739	13,973,397	13,051,960	12,810,172	8,898,190	7,290,628
Mount Perry ..	35	43	45	32	103	27,171	22,628	24,177	11,337	30,299
Nanango	60	189	298	739	1,658	15,437	38,973	63,483	225,528	410,168
Pittsworth	..	..	52	61	229	..	..	6,082	7,342	38,169
Rockhampton ..	1,009	1,484	1,939	1,535	1,388	926,831	436,670	293,594	334,387	144,169
Roma	418	334	253	120	150	112,341	49,715	48,906	5,334	8,911
Rosewood	37	22	56	31	67	4,037	5,384	27,742	10,643	16,886
St. Lawrence ..	44	45	26	7	7	9,954	15,438	5,406	1,335	2,718
Springsure	45	109	76	71	47	4,941	10,401	12,503	2,579	487
Texas	5	4	5	41	10	1,196	603	294	12,379	5,760
Tiaro	8	14	19	3	12	2,475	5,335	5,961	432	3,696
Toogoolawah ..	50	22	72	43	131	22,102	14,154	37,580	3,244	44,094
Toowoomba–Helidon	16	22	49	58	82	7,750	14,162	26,317	13,393	18,031
Wienholt	670	1,369	1,105	1,721	3,684	306,319	420,564	451,760	550,321	1,128,472
All Other Districts	127	114	61	37	256	28,839	17,047	9,962	2,964	47,744
Total, State ..	43,397	54,947	62,200	52,692	66,470	26,924,179	20,785,418	19,198,600	11,792,828	13,687,872

Note.—Approximately 3,700 persons supplied seed cotton to the ginneries during 1938.

Table No. 13.

SUGAR CANE—GROWERS AND AREAS, 1938.

Division and District.	Cane Growers. a		Area of Cane Grown.				
	With less than five Acres of Cane.	Total.	Cut for Plants.	Standover and Newly Planted (Not Cut in 1938.)	Cut for Crushing.	Total. b	Total per Grower.
	No.	No.	Acres.	Acres.	Acres.	Acres.	Acres.
Rockingham—							
Cairns and Douglas	14	786	1,687	5,660	37,839	45,186	57·5
Cardwell, Ingham, and Innisfail	13	1,422	3,121	7,252	66,015	76,388	53·7
Total, Rockingham	27	2,208	4,808	12,912	103,854	121,574	55·1
Edgecumbe—							
Ayr and Townsville	4	607	1,228	12,522	25,206	38,956	64·2
Proserpine and Bowen	11	363	482	3,025	9,522	13,029	35·9
Mackay and St. Lawrence	57	1,903	3,546	25,009	67,559	96,114	50·5
Total, Edgecumbe	72	2,873	5,256	40,556	102,287	148,099	51·5
Wide Bay—							
Bundaberg and Gin Gin	58	1,118	692	17,502	24,582	42,776	38·3
Biggenden, Childers, Maryborough, Tiaro, and Gympie (Mary Valley)	143	923	358	9,661	15,962	25,981	28·1
Total, Wide Bay	201	2,041	1,050	27,163	40,544	68,757	33·7
Moreton—							
Caboolture, Maroochy, Redcliffe, and Gympie (Coastal)	148	524	93	2,779	4,297	7,169	13·7
Logan and Southport, ...	68	209	47	688	865	1,600	7·7
Total, Moreton	216	733	140	3,467	5,162	8,769	12·0
Total, Queensland	516	7,855	11,254	84,098	251,847	347,199	44·2

a Represents the number of separate holdings on which cane was grown for sugar, and the figures shown may, therefore, not be the number of individual cane suppliers to mills, as the crops of several suppliers are sometimes grown on the one holding.

b Exclusive of 3,602 acres cut for green fodder in the State ; 3,094 acres of which were in the sugar districts.

Table No. 14.

SUGAR—PRODUCTION OF CANE AND RAW SUGAR, 1938.

Division and District.	On Farms in each District.				In Mills in each District.			
	Cane cut for Crushing.	Cane per Acre.	Estimated Raw Sugar Yield. a	Sugar per Acre.	Cane Crushed.	Raw Sugar Produced. a	Cane for each ton of Sugar.	Molasses Produced.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Gallons.
Rockingham—								
Cairns and Douglas	823,489	21·76	118,100	3·12	834,065	119,608	6·97	3,353,120
Cardwell, Ingham and Innisfail ..	1,495,947	22·66	217,171	3·29	1,441,875	208,723	6·91	5,100,403
Total, Rockingham	2,319,436	22·33	335,271	3·23	2,275,940	328,331	6·93	8,453,523
Edgecumbe—								
Ayr and Townsville	711,045	28·21	110,798	4·40	755,047	117,814	6·41	2,834,401
Proserpine and Bowen	171,262	17·99	26,866	2·82	195,016	30,596	6·37	669,170
Mackay and St. Lawrence	1,104,410	16·35	169,917	2·52	1,080,150	166,111	6·50	4,189,436
Total, Edgecumbe	1,986,717	19·42	307,581	3·01	2,030,213	314,521	6·45	7,693,007
Wide Bay—								
Bundaberg and Gin Gin	579,151	23·56	74,505	3·03	607,683	78,048	7·79	2,522,102
Biggenden, Childers, Maryborough, Tiaro and Gympie (Mary-Valley)	328,153	20·56	43,167	2·70	299,621	39,624	7·56	1,258,487
Total, Wide Bay	907,304	22·38	117,672	2·90	907,304	117,672	7·71	3,780,589
Moreton—								
Caboolture, Maroochy, Redcliffe, and Gympie (Coastal)	110,102	25·62	15,275	3·55	110,414	15,318	7·21	410,517
Logan and Southport	18,634	21·54	2,265	2·62	18,322	2,222	8·25	49,900
Total, Moreton	128,736	24·94	17,540	3·40	128,736	17,540	7·34	460,417
Total, Queensland	5,342,193	21·21	778,064*b*	3·09	5,342,193	778,064*b*	6·87	20,387,536

a Raw Sugar Production is stated in tons of 94 net titre.

b Includes sugar in a small quantity of " B " syrup sold to a distillery.

SUGAR DISTRICTS.—The divisions used are the standard statistical divisions (as used throughout this Report) with the following modifications:—

(1) Although actually in Port Curtis, St. Lawrence Petty Sessions District, being portion of the Mackay Sugar area, is included in Edgecumbe.

(2) The Mary Valley portion of Gympie Petty Sessions District is included in Wide Bay, the cane from this area having been crushed at Bauple Mill.

(3) The Coastal portion of Gympie District south of the City, though actually in Wide Bay, is included in Moreton, the cane from this area having been crushed at Nambour Mill.

Table No. 15.

SUGAR.—Five Years Summary for Divisions.

Statistical Division.	Year.	On Farms in each Division.			In Mills in each Division.		
		Area Cut for Crushing.	Cane cut for Crushing.	Cane per Acre.	Cane Crushed.	Raw Sugar Produced. *a*	Cane for each ton of Sugar.
		Acres.	Tons.	Tons.	Tons.	Tons.	Tons.
Rockingham	1934	90,999	1,732,883	19·04	1,686,857	233,976	7·21
	1935	93,368	1,814,619	19·44	1,780,804	258,563	6·89
	1936	104,182	2,458,466	23·60	2,409,891	333,686	7·22
	1937	103,898	2,577,050	24·80	2,524,301	373,707	6·75
	1938	103,854	2,319,436	22·33	2,275,940	328,331	6·93
Edgecumbe	1934	87,490	1,721,133	19·67	1,767,159	269,801	6·55
	1935	90,103	1,496,601	16·61	1,530,416	233,897	6·54
	1936	97,234	1,917,716	19·72	1,966,291	301,877	6·51
	1937	100,343	1,908,657	19·02	1,961,406	304,547	6·44
	1938	102,287	1,986,717	19·42	2,030,213	314,521	6·45
Wide Bay	1934	36,422	765,729	21·02	763,926	100,309	7·62
	1935	39,715	810,229	20·40	810,229	104,386	7·76
	1936	39,832	715,596	17·97	715,596	97,907	7·31
	1937	36,473	567,096	15·55	567,096	74,567	7·61
	1938	40,544	907,304	22·38	907,304	117,672	7.71
Moreton	1934	3,515	51,635	14·69	53,438	7,075	7·55
	1935	5,329	98,986	18·57	98,986	13,234	7·48
	1936	4,670	78,793	16·87	78,793	11,206	7·03
	1937	4,417	80,083	18·13	80,083	10,421	7·68
	1938	5,162	128,736	24·94	128,736	17,540	7·34
Total, Queensland	1934	218,426	4,271,380	19·56	4,271,380	611,161	6·99
	1935	228,515	4,220,435	18·47	4,220,435	610,080	6·92
	1936	245,918	5,170,571	21·03	5,170,571	744,676	6·94
	1937	245,131	5,132,886	20·94	5,132,886	763,242	6·73
	1938	251,847	5,342,193	21·21	5,342,193	778,064	6·87

a In tons of 94 n.t.

Table No. 16.

MOLASSES.—Production and Disposal, 1938.

Statistical Division.	Molasses Produced.	Molasses Disposed of. *a*						
		To Distilleries.	As Stock Food.	As Manure.	In Furnaces.	In Ferment.	For Other Uses.	As Waste.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Rockingham	8,453,523	3,592,750	779,506	1,266,476	2,557,508	128,504	4,080	28,880
Edgecumbe	7,693,007	2,418,676	2,480,264	1,013,036	1,101,985	87,240	..	470,046
Wide Bay	3,780,589	1,993,896	789,974	1,014,031	89,097	..	11,825	..
Moreton	460,417	270,565	187,452	..	..	400	..	..
Total, Queensland ..	20,387,536	8,275,887	4,237,196	3,293,543	3,748,590	216,144	15,905	498,926

Five Years Summary—Queensland.

1934	17,262,794	4,573,037	3,035,598	2,227,905	5,339,489	104,552	444,680	1,162,715
1935	16,948,539	4,617,431	3,817,755	2,559,528	4,103,475	125,300	175,519	1,214,678
1936	21,355,321	6,086,864	4,351,822	3,211,423	6,354,841	145,060	252,020	560,326
1937	21,169,136	7,071,109	3,914,113	3,363,624	5,576,764	150,136	7,360	466,481
1938	20,387,536	8,275,887	4,237,196	3,293,543	3,748,590	216,144	15,905	498,926

a The difference between production and total disposals of molasses is accounted for by stocks carried over .

Table No. 17.

SUGAR-GROWING—SUMMARY.

Year.	Cane Growers.		Area of Cane Grown.			Production.					
	With less than 5 Acres of Cane.	Total.	Cut for Crushing.	Total under Cane. *b*	Total per Grower.	Cane Crushed.	Raw Sugar. *c*	Cane per Acre Cut.	Cane for each ton of Sugar.	Sugar per Acre Cut.	Gross Value. of Cane Cut. *e*
	No.	No.	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1911–1915 *a*	*	*	95,837	146,799	*	1,537,880	179,107	16·05	8·57	1·87	1,591,405
1916–1920 *a*	*	*	94,042	162,921	*	1,711,354	200,840	18·20	8·52	2·14	2,985,826
1921–1925 *a*	*	*	151,933	225,962	*	2,668,161	346,776	17·56	7·69	2·28	5,945,796
1926–1930 *a*	729	7,255	209,132	282,513	38·94	3,465,545	486,187	16·57	7·13	2·32	6,935,120
1931–1935 *a*	493	7,395	222,689	306,298	41·42	4,147,921	591,021	18·63	7·02	2·65	7,086,777
1929	1,064	7,311	214,880	291,660	39·89	3,581,265	518,516	16·67	6·91	2·41	7,163,024
1930	543	7,228	222,044	296,070	40·96	3,528,660	516,783	15·89	6·83	2·33	7,040,415
1931	541	7,392	233,304	309,818	41·91	4,034,300	581,276	17·29	6·94	2·49	7,326,233
1932	553	7,231	205,046	291,136	40·26	3,546,370	514,027	17·30	6·90	2·51	6,852,717
1933	409	7,386	228,154	311,910	42·23	4,667,122	638,559	20·46	7·31	2·80	7,247,122
1934	513	7,426	218,426	303,926	40·93	4,271,380	611,161	19·56	6·99	2·80	6,934,764
1935	451	7,538	228,515	314,700	41·75	4,220,435	610,080	18·47	6·92	2·67	7,073,049
1936	420	7,784	245,918	338,686	43·51	5,170,571	744,676	21·03	6·94	3·03	8,297,838
1937	541	7,875	245,131	348,840	44·30	5,132,886	763,242	20·94	6·73	3·11	8,572,730
1938	516	7,855	251,847	347,199	44·20	5,342,193	778,064*d*	21·21	6·87	3·09	8,691,656

* Not available. *a* Annual average. *b* Exclusive of area cut for fodder. *c* In tons of 94 N.T.

d The value at Mill of Raw Sugar produced in 1938 was £11,372,676, equal to £14 12s. 4d. a ton. The average price paid to Mills by the Sugar Board was £15 2s. 2d. at nearest Mill port.

e Value of cane delivered at mill tramways. The 1938 value includes £181,591 costs of transport other than on the mills' own tramways, lorries, etc., and £74,184 levies on cane paid by millers and growers, the net value to growers being £8,435,881.

Table No. 18.

SUGAR MILLS *a*, 1937–38.

Division.	Mills.	Workers During Period of Operation.	Salaries and Wages Paid.	Value of—			
				Machinery and Plant.	Land and Buildings.	Output.	Production.
	No.	No.	£	£	£	£	£
Rockingham	10	1,961	589,721	4,512,298	558,017	5,640,684	1,112,734
Edgecumbe	12	1,653	480,752	2,078,656	310,809	4,300,847	846,580
Wide Bay	8	647	167,419	752,379	170,476	1,291,460	290,314
Moreton	3	132	29,828	165,136	15,954	185,715	55,061
Total, Queensland ..	33	4,393	1,267,720	7,508,469	1,055,256	11,418,706	2,304,690
FIVE YEARS SUMMARY.							
1933–34	33	5,374	1,190,086	6,518,636	794,111	10,281,640	2,222,457
1934–35	33	4,585	1,164,638	6,705,397	762,997	9,533,760	2,087,196
1935–36	33	4,213	1,149,018	7,688,522	1,019,066	9,699,025	2,151,057
1936–37	33	4,476	1.230,236	7,522,632	1,026,976	11,026,276	2,178,832
1937–38	33	4,393	1,267,720	7,508,469	1,055,256	11,418,706	2,304,690

a Including Mill Tramways, but not including Refineries.

Table No. 19.

AUSTRALIAN SUGAR PRODUCTION.

Year.	Area Under Cultivation. *a*	Area Harvested.	Production (Cane or Beet).	Raw Sugar Made. *b*	Raw Sugar as Percentage of Australian Total.
	Acres.	Acres.	Tons.	Tons.	Per cent.
QUEENSLAND (CANE SUGAR).					
1934	303,926	218,426	4,271,380	611,161	94·5
1935	314,700	228,515	4,220,435	610,080	93·6
1936	338,686	245,918	5,170,571	744,676	94·6
1937	348,840	245,131	5,132,886	763,242	93·5
1938	347,199	251,847	5,342,193	778,064	94·3
NEW SOUTH WALES (CANE SUGAR).					
1934	18,531	7,572	227,424	30,690	4·7
1935	20,394	10,416	280,472	36,463	5·6
1936	20,642	10,231	275,169	38,053	4·9
1937	21,056	10,716	361,724	47,077	5·8
1938	*c*	10,458	336,701	45,095	5·5
VICTORIA (BEET SUGAR).					
1934	3,062	3,062	40,788	4,998	0·8
1935	3,165	3,165	37,634	5,115	0·8
1936	3,475	3,475	31,079	4,180	0·5
1937	4,046	4,046	48,594	5,625	0·7
1938	4,268	2,454	13,454 *d*	1,507	0·2

a Exclusive of area cut for fodder. *b* In tons of 94 N.T.
c Not yet available. *d* The quantity of beet sliced was 12,755 tons.

Table No. 20.

SUGAR MILLS.

Number of Sugar Mill Companies to which advances have been made under—	
The Sugar Works Guarantee Acts	13
"*The Sugar Works Act of* 1911" (Babinda and South Johnstone)	2
"*The Sugar Works Act of* 1922" (Tully River Mill)	1
From Consolidated Revenue (North Eton and Racecourse)	2
From General Loan Fund	6
From Trust Funds	None
Number of Tramway Companies to which advances have been made under—	
The Sugar Works Guarantee Acts (Double Peak)	1
Under other conditions	None

Total amount of advances made to 31st December, 1937, under the Sugar Works Guarantee Acts—	£	s.	d.	£	s.	d.
Marian Mill	39,000	0	0			
Mount Bauple	32,480	16	1			
Pleystowe	35,472	1	3			
Nerang River	19,998	18	10			
Gin Gin	50,000	0	0			
Plane Creek	65,000	0	0			
North Eton	18,200	0	0			
Proserpine	54,000	0	0			
Moreton	32,864	15	0			
Mulgrave	46,000	0	0			
Isis	38,636	0	0			
Mossman	66,300	0	0			
Johnstone	847	17	8			
				498,800	8	10
Under "*The Sugar Works Act of* 1911"—						
Babinda Mill	405,429	18	8			
South Johnstone	648,009	7	8			
				1,053,439	6	4
Under "*The Sugar Works Act of* 1922"—						
Tully River	..			795,221	0	0
From Consolidated Revenue—						
North Eton	26,000	0	0			
Racecourse	21,000	0	0			
				47,000	0	0
From General Loan Fund—						
North Eton Mill	62,965	18	4			
Mount Bauple	8,500	0	0			
Gin Gin	4,500	0	0			
Proserpine	128,265	9	4			
Moreton	14,350	0	0			
Mossman	14,071	14	0			
				232,653	1	8
Indebtedness at 31st December, 1937—						
Under "*The Sugar Works Act of* 1911"—						
Babinda Mill	..			..		
Under "*The Sugar Works Acts,* 1930 *to* 1937"—						
Tully River Mill	..			321,504	14	5
Under "*The South Johnstone, Gin Gin, North Eton, and Mount Bauple Sugar Works Acts,* 1927 *to* 1937"—						
South Johnstone Mill	162,321	10	7			
Gin Gin	15,854	19	9			
North Eton	26,279	14	3			
Mount Bauple	19,823	16	8			
				224,280	1	3
To General Loan Fund—						
Proserpine	63,896	5	11			
Gin Gin	2,367	19	0	66,264	4	11

Table No. 21.

ARROWROOT.

Year.	Area.	Production Tubers.	Value.	No. of Mills.	Workers during period of operation.	Tubers used.	Arrowroot Made.	Value.
	Acres.	Tons.	£		No.	Tons.	Tons.	£
1934	835	9,712	10,683	14	133	8,214	827	17,169
1935	860	10,239	10,239	14	107	7,161	719	12,779
1936	865	10,204	10,500	13	101	7,893	790	14,972
1937	774	7,494	12,030	13	93	5,290	531	14,506
1938	797	6,691	15,555	14	97	7,730	780	25,754

Table No. 22.

TOBACCO.—AREA AND PRODUCE IN PETTY SESSIONS DISTRICTS.

Petty Sessions District.	Area.					Produce (Dried Leaf).				
	1934.	1935.	1936.	1937.	1938.	1934.	1935.	1936.	1937.	1938.
	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton—										
Caboolture	3	20	7	3	..	2,694	300	561	3,100	..
Gatton	..	..	*	..	..	..	..	20	..	..
Toogoolawah ..	..	..	..	..	7	..	..	..	..	1,170
Wide Bay—										
Bundaberg	29	26	26	30	17	3,980	9,739	11,439	8,000	8,412
Gayndah	..	..	2	2	2	..	..	257	481	640
Maryborough ..	..	..	..	..	*	..	..	..	..	30
Downs—										
Goondiwindi ..	..	..	51	..	15	..	..	18,820	..	13,440
Inglewood	234	337	270	365	368	82,131	143,835	217,000*a*	264,587*a*	340,354
Stanthorpe	42	25	3	5	5	40,653	26,730	..	2,550	2,000
Texas	151	174	320	279	296	87,398	107,181	300,000*a*	267,343*a*	297,682*a*
Port Curtis—										
Gladstone	32	62	72	120	277	8,481	24,797	44,919	69,100*a*	143,646*a*
Rockhampton ..	..	1	..	..	..	..	387	..	..	..
Edgecumbe—										
Ayr	9	10	18	2	21	2,920	4,660	9,500	685	8,336
Bowen	76	139	156	129	85	71,506	70,228	68,692	61,425*a*	34,277
Charters Towers ..	18	4	2	..	..	18,646	1,558	500	..	..
Collinsville	14	15	10	13	..	6,240	5,500	3,300	7,791	..
Mackay	25	87	163	255	325	38,052	60,621	80,000*a*	135,690*a*	111,980*a*
Ravenswood ..	6	3	4	2	..	5,824	3,584	3,360	2,464	..
Townsville	110	99	119	57	83	88,896	24,840	59,463	21,090	52,473
Rockingham—										
Atherton	15	15	15	6	4	3,849	6,494	6,000	2,600	2,432
Cairns	30	20	..	..	..	4,710	4,422	..	..	..
Chillagoe	1	..	..	..	..	70	..	..	..	..
Herberton	18	18	21	21	4	3,246	4,649	7,595	8,376	2,925
Ingham	4	4	..	10	9	1,200	3,500	..	7,000	3,400
Mareeba	1,258	2,053	2,714	2,513	2,222	553,253	1,051,308	1,173,605*a*	1,454,784*a*	1,174,043*a*
Peninsula—										
Cook	6	5	..	..	..	1,300	750	..	..	..
Total State ..	2,081	3,117	3,973	3,812	3,740	1,025,049	1,555,083	2,005,031	2,317,066	2,197,240

* Less than ½ acre.

a Partly based on estimates made by experts of Department of Agriculture and Stock.

Table No. 23.

GRAPES.—AREA UNDER VINES AND PRODUCTION OF GRAPES IN PETTY SESSIONS DISTRICTS.

Petty Sessions District.	Total Area under Vines.			Bearing Area.			Production.		
	1936.	1937.	1938.	1936.	1937.	1938.	1936.	1937.	1938.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.	Lb.
Banana	1	1	1	1	1	1	1,720	2,625	1,600
Brisbane (North)	244	262	233	221	241	213	427,091	459,488	472,110
Brisbane (South)	5	8	3	5	6	3	13,422	17,600	8,960
Caboolture	1	4	*	1	4	*	800	1,350	350
Charleville	5	1	1	5	1	1	8,460	3,805	2,936
Charters Towers	23	30	23	21	26	21	49,850	57,517	58,414
Cleveland	3	3	5	3	1	2	3,788	1,900	5,053
Clifton	1	1	1	1	1	1	3,210	1,872	1,490
Condamine	4	2	4	4	2	4	1,825	2,592	4,000
Cunnamulla	2	1	*	2	1	*	2,357	2,010	20
Dalby	2	2	3	1	2	2	7,316	14,634	8,625
Eidsvold	2	1	*	1	1	*	480	805	160
Gatton	4	4	8	4	4	4	8,900	3,400	4,300
Gladstone	2	1	1	2	1	1	3,075	1,310	1,190
Goondiwindi	*	1	*	*	1	*	1,265	2,825	100
Gympie	15	10	7	10	8	6	15,839	6,980	10,410
Herberton	13	9	10	12	7	8	13,679	10,400	12,030
Laidley	1	1	1	1	1	1	1,700	2,700	2,060
Logan	5	3	4	4	3	3	4,298	3,407	4,032
Lowood	57	73	65	55	61	62	209,000	186,530	217,120
Mackay	2	3	1	2	1	1	2,152	2,187	2,400
Maryborough	8	9	12	8	8	10	5,363	11,084	10,536
Nanango	2	1	6	1	1	6	695	3,710	5,620
Oakey	3	6	10	3	3	5	7,369	5,650	7,116
Rockhampton	40	33	51	34	28	45	57,118	68,295	113,406
Roma	429	454	481	355	404	424	509,187	305,141	696,030
Stanthorpe	1,528	1,679	1,731	1,101	1,307	1,337	3,464,749	3,922,481	4,019,049
Tiaro	5	5	7	5	5	7	11,439	12,916	10,570
Toogoolawah	10	9	8	5	8	8	9,672	14,990	27,020
Toowoomba { Helidon	4	6	3	3	5	3	15,030	20,400	16,030
Toowoomba { Toowoomba	13	8	8	13	8	8	18,926	19,909	15,877
Warwick	22	34	33	22	31	27	42,905	54,570	51,864
Woodford	*	..	*	*	..	*	1,300	..	140
Wynnum	7	8	12	6	6	10	18,320	13,730	31,860
Yuleba	3	6	5	3	5	5	5,000	7,410	15,420
All Other	35	37	55	29	31	38	50,551	76,662	93,124
Total	2,501	2,716	2,793	1,944	2,224	2,267	4,997,851	5,322,885	5,931,022

* Less than ½ acre.

Table No. 24.

WINE MADE IN PETTY SESSIONS DISTRICTS DURING 1938 AND TOTAL STATE FIGURES FOR FIVE YEARS.

Petty Sessions District.	Number of Makers.	Quantity of Wine Made.	Grapes Used.
	No.	Gallons.	Lb.
Moreton—			
Gatton	1	6	120
Toogoolawah	1	630	2,000
Wynnum	1	250	3,600
Wide Bay—			
Bundaberg	1	150	3,360
Childers	1	20	500
Downs—			
Oakey	2	140	2,360
Stanthorpe	18	7,860	211,544
Toowoomba	3	360	4,840
Warwick	1	1,000	15,680
Maranoa—			
Roma	2	34,093	420,574
Port Curtis—			
Gladstone	1	85	1,000
Total, State	32	44,594	665,578
Total State, 1938	32	44,594	665,578
1937	25	16,909	263,750
1936	22	29,121	388,230
1935	21	22,569	328,368
1934	26	38,051	570,121

Table No. 25.

BANANAS—AREA AND PRODUCTION IN PETTY SESSION DISTRICTS.

Petty Sessions. District.	Growers.			Total Area.			Area Bearing.			Produce.		
	1936.	1937.	1938.	1936.	1937.	1938.	1936.	1937.	1938.	1936.	1937.	1938.
	No.	No.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Bunches.	Bunches.	Bunches.
Atherton	11	7	10	3	5	10	3	5	9	444	1,304	1,447
Ayr	12	14	9	27	37	38	21	24	24	4,456	7,262	13,150
Beaudesert	3	1	2	16	11	10	15	11	10	2,100	950	1,595
Biggenden	4	2	1	15	16	12	13	14	9	3,112	1,674	600
Bowen	13	7	7	11	8	15	5	7	10	1,588	1,917	1,449
Brisbane (North)	62	40	75	281	281	252	159	146	153	50,786	38,549	47,277
Brisbane (South)	3	2	2	2	*	3	1	*	2	650	40	250
Bundaberg	27	24	31	83	60	99	59	36	74	15,996	10,213	16,786
Burke	1	1	1	1	2	2	*	2	2	20	98	80
Caboolture	32	32	41	331	345	367	190	233	257	62,423	49,418	90,260
Cairns	39	28	30	147	96	132	134	75	131	10,868	13,447	19,154
Cardwell	6	13	13	35	50	43	20	36	34	2,612	9,942	8,277
Charters Towers	..	..	1	..	..	*	..	..	*	..	..	20
Childers	3	1	..	*	*	..	*	*	..	31	50	..
Chillagoe	2	..	..	1	..	..	1	..	..	100	..	..
Cleveland	67	42	67	196	121	178	152	71	112	30,345	15,047	26,498
Coen	1	..	..	*	..	..	*	..	..	2	..	..
Cook	3	3	4	4	2	3	4	2	2	345	330	60
Croydon	..	1	..	..	*	..	..	*	..	..	40	..
Douglas	2	3	1	*	*	*	*	*	*	36	55	12
Dugandan	2	1	..	5	1	..	5	..	..	200	..	..
Eidsvold	..	1	..	..	1	..	..	..	..	..	..	..
Emerald	..	1	1	..	*	*	..	*	*	..	6	5
Esk	5	2	1	20	25	20	11	19	11	2,947	1,220	3,000
Gayndah	5	5	3	16	17	15	14	15	13	1,806	1,260	1,990
Gin Gin	3	2	4	4	3	3	3	3	3	340	270	130
Gladstone	13	20	19	91	99	104	52	68	76	13,833	16,339	12,907
Gympie	112	108	172	723	808	1,085	425	397	736	109,379	107,325	155,388
Herberton	3	28	1	*	..	*	*	..	*	18	..	20
Hughenden	..	1	..	..	*	..	..	*	..	..	10	..
Ingham	90	..	11	8	6	9	8	6	7	1,375	1,335	506
Innisfail	14	7	8	17	3	19	16	3	16	1,940	326	6,815
Ipswich	..	..	1	..	..	*	..	..	..	..	..	..
Kilcoy	3	2	4	18	20	33	18	8	23	2,950	2,000	6,637
Kilkivan	..	..	2	..	..	1	..	..	..	..	..	..
Laidley	1	1	1	2	2	2	2	2	2	300	190	300
Logan	139	161	165	604	648	751	464	430	574	157,586	134,760	192,572
Mackay	38	36	29	49	63	107	34	33	91	9,360	11,387	49,894
Marburg	..	..	1	..	..	*	..	..	..	..	..	..
Mareeba	11	15	11	21	7	10	10	5	8	531	671	1,785
Maroochy	268	303	345	1,484	1,475	1,529	1,002	922	1,046	283,248	296,046	308,634
Maryborough	17	17	19	16	14	27	11	10	14	3,613	3,068	3,710
Mount Morgan	..	..	1	..	..	*	..	..	*	..	..	2
Mount Perry	2	1	1	6	2	3	2	2	3	200	220	200
Norman	..	1	1	..	*	1	..	*	1	..	100	100
Proserpine	1	..	2	*	..	7	*	..	7	20	..	310
Redcliffe	37	39	37	196	319	278	141	164	152	43,043	41,916	44,456
Rockhampton	28	45	47	275	271	281	159	190	183	54,263	65,013	64,352
Somerset	2	2	1	10	11	2	*	7	1	18	412	70
Southport	117	195	218	2,135	2,817	2,785	1,487	1,931	2,215	491,454	595,340	586,557
St. Lawrence	5	6	5	13	10	10	9	9	8	1,680	1,829	926
Tiaro	8	10	14	47	30	34	36	15	28	5,670	1,800	3,320
Toowoomba-Helidon	..	1	..	..	1	..	..	..	..	..	..	..
Townsville	17	15	17	43	40	30	27	28	26	4,152	4,714	5,908
Wienholt	..	..	3	..	..	*	..	..	*	..	..	12
Woodford	21	23	34	306	424	445	229	343	374	57,743	71,986	75,286
Wynnum	7	5	9	43	23	26	41	16	15	13,661	7,572	6,191
Total State	1,260	1,275	1,483	7,305	8,174	8,781	4,983	5,288	6,462	1,447,244	1,517,451	1,758,898

* Less than ½ acre.

Table No. 26.

PINEAPPLES—AREA AND PRODUCTION IN PETTY SESSIONS DISTRICTS.

Petty Sessions District.	Total Area.			Bearing Area.			Produce.		
	1936.	1937.	1938.	1936.	1937.	1938.	1936.	1937.	1938.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Dozen.	Dozen.	Dozen.
Atherton	2	6	2	2	5	2	232	228	424
Ayr	1	10	37	1	2	5	127	548	1,134
Biggenden	6	7	6	6	6	5	548	76	680
Bowen	224	207	259	149	148	170	29,446	27,005	29,862
Brisbane (North) ..	366	397	426	270	250	297	73,934	56,402	70,559
Brisbane (South) ..	191	202	178	136	138	130	22,324	22,141	25,734
Bundaberg	65	67	75	41	45	68	6,510	6,590	14,007
Caboolture	589	495	658	413	322	475	79,263	156,830	171,322
Cairns	40	28	56	36	24	53	3,016	5,127	11,738
Cardwell	9	10	5	5	8	2	643	901	131
Charters Towers ..	1	..	..	1	..	..	..	..	..
Childers	1	28	21	1	26	20	146	2,660	6,806
Chillagoe	*	..	..	*	..	..	2	..	..
Cleveland	635	356	309	516	224	221	75,914	48,685	51,598
Coen	*	..	..	*	..	..	1	..	..
Cook	2	*	1	2	*	*	86	6	14
Croydon	..	*	..	..	*	..	..	10	..
Douglas	..	*	*	..	*	*	..	6	30
Dugandan	2	1	2	1	1	2	108	20	70
Eidsvold	1	1	..	..	*	..	..	3	..
Esk	*	..	*	..	..	*	..	..	2
Gatton	..	3	26	..	*	20	..	2	934
Gayndah	11	10	10	9	7	8	447	792	863
Gin Gin	10	3	3	10	3	3	735	207	272
Gladstone	17	24	25	14	12	19	2,744	1,081	3,251
Gympie	772	902	992	505	540	724	210,252	156,872	235,683
Harrisville	..	..	*	..	..	*	..	..	16
Ingham	6	16	12	6	14	9	1,706	6,894	2,085
Innisfail	1	*	14	1	*	9	55	57	1,381
Ipswich	34	27	46	29	24	44	5,026	7,100	11,996
Kilcoy	*	..	*	*	..	*	50	..	30
Kilkivan	*	..	5	*	..	*	7	..	5
Laidley	3	3	5	2	2	3	177	134	373
Logan	49	62	69	37	33	44	6,745	7,143	12,346
Lowood	24	37	32	18	20	30	6,174	3,370	5,340
Mackay	25	23	34	17	17	22	3,116	5,726	4,735
Marburg	12	18	13	10	13	13	595	1,243	1,474
Mareeba	3	7	3	1	5	3	246	289	546
Maroochy	2,427	2,806	2,915	1,578	1,792	2,178	565,765	671,752	991,220
Maryborough ..	228	146	155	194	106	130	32,706	34,147	50,586
Mount Morgan ..	5	3	6	5	2	6	710	239	1,090
Mount Perry	*	1	*	*	1	*	20	..	15
Nanango	1	4	5	1	2	3	60	545	907
Norman	..	*	*	..	*	*	..	34	20
Proserpine	*	*	1	*	*	1	49	27	92
Redcliffe	119	155	151	77	91	97	16,839	29,784	35,001
Rockhampton ..	192	201	208	146	144	172	36,096	34,621	48,100
Rosewood	1	..	*	..	..	*	..	..	20
Somerset	2	5	..	2	4	..	40	66	..
Southport	5	14	11	5	8	4	640	1,860	1,122
St. Lawrence ..	13	17	16	9	10	13	2,323	3,851	4,643
Tiaro	36	40	64	27	26	53	5,412	5,233	11,475
Townsville	81	99	96	66	85	75	25,356	16,234	24,695
Wienholt	6	3	2	3	3	2	105	363	298
Woodford	19	20	18	13	16	18	2,589	2,240	4,484
Wynnum	77	85	77	43	49	45	8,649	8,944	8,464
Total State ..	6,314	6,549	7,049	4,408	4,228	5,198	1,227,734	1,331,091	1,847,673

* Less than ½ Acre.

Table No. 27.

ORANGES AND MANDARINS.—Area and Production in Petty Sessions Districts.

Petty Sessions District.	Total Area.			Bearing Area.			Produce.		
	1936.	1937.	1938.	1936.	1937.	1938.	1936.	1937.	1938.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Allora	28	60	55	22	50	40	762	1,406	1,544
Atherton	15	22	19	12	16	15	1,422	1,745	1,155
Ayr	12	6	4	11	2	3	749	417	258
Blackall	3	9	7	2	4	1	275	247	56
Bowen	44	42	38	35	34	28	821	909	791
Brisbane	24	23	17	17	11	5	1,111	331	256
Bundaberg	74	104	111	52	72	81	4,550	5,249	4,818
Caboolture	82	128	113	57	89	88	13,196	4,159	9,464
Cairns	51	94	67	45	80	52	7,302	7,007	4,413
Cardwell	264	290	312	192	197	256	15,111	17,141	15,343
Charleville	15	23	23	13	16	21	683	1,013	1,299
Charters Towers ..	88	110	121	72	84	94	5,033	5,379	6,252
Childers	51	64	84	49	60	80	5,469	7,201	9,610
Cleveland	15	11	13	10	10	11	812	370	329
Cloncurry	7	11	4	3	7	3	88	275	10
Cook	23	60	44	21	54	40	1,043	1,900	631
Crow's Nest	24	25	35	18	20	33	676	805	2,219
Cunnamulla	8	9	3	8	9	3	683	611	160
Dalby	7	7	8	5	5	6	298	349	425
Douglas	4	9	5	2	6	4	274	919	174
Dugandan	2	3	5	1	2	4	119	270	335
Eidsvold	5	11	12	4	5	5	95	255	383
Emerald	41	45	58	33	40	41	6,790	8,891	5,106
Esk	63	52	65	55	44	60	2,166	856	5,104
Gatton	84	124	153	53	86	125	6,784	6,676	18,588
Gayndah	194	258	248	134	190	172	25,429	29,952	27,107
Gin Gin	10	13	16	9	11	12	613	1,088	844
Gladstone	43	43	52	36	34	42	2,113	3,085	2,047
Goondiwindi ..	9	18	10	9	16	10	404	270	50
Gympie	67	75	60	47	51	49	3,431	3,553	3,063
Harrisville	4	2	2	2	2	1	125	359	105
Herberton	4	7	7	2	4	5	537	963	563
Hughenden	2	11	9	2	10	8	500	634	425
Ingham	27	26	27	21	21	23	2,897	4,901	3,926
Innisfail	12	18	29	9	10	23	689	1,087	1,057
Ipswich	6	10	11	6	9	9	280	270	521
Logan	46	34	42	40	28	39	5,395	1,373	1,647
Mackay	82	100	97	56	64	74	3,662	9,045	10,774
Mareeba	17	27	18	7	11	12	441	798	510
Maroochy	888	1,040	932	715	796	718	93,826	61,501	100,780
Maryborough ..	471	542	537	370	424	447	48,549	58,161	55,209
Monto	3	2	5	1	2	3	7	245	152
Mount Morgan ..	17	23	25	13	18	19	1,928	1,808	2,901
Mount Perry ..	5	4	7	4	4	7	386	350	322
Nanango	7	6	7	5	4	6	160	214	229
Oakey	7	4	9	6	3	6	56	219	220
Proserpine	21	15	15	16	12	12	1,590	1,268	1,300
Ravenswood	4	6	7	3	5	5	140	514	555
Redcliffe	13	11	8	12	9	6	897	557	1,121
Rockhampton ..	202	245	233	173	212	208	17,501	22,279	20,989
Roma	60	67	87	35	48	50	2,755	2,949	2,687
St. Lawrence ..	2	3	4	1	2	3	165	322	205
Southport	53	73	162	46	61	110	5,069	2,986	8,488
Tiaro	19	23	21	13	19	16	1,058	695	821
Toogoolawah ..	5	6	3	4	5	2	271	253	206
Toowoomba—									
Helidon	26	49	72	20	34	49	2,849	1,729	3,940
Toowoomba ..	19	22	20	16	15	16	672	545	1,612
Townsville	22	37	31	17	33	25	204	1,725	2,730
Wienholt	12	11	12	8	8	10	2,061	308	541
Woodford	7	5	6	6	5	5	374	449	732
All Other Districts ..	114	146	137	94	114	101	4,093	2,277	6,950
Total State ..	3,534	4,324	4,344	2,750	3,297	3,402	307,439	293,113	354,052

Table No. 28.

GRAIN AND OTHER CROPS—AREAS, 1938.

(For Production see Table 31.)

Division.	Grain Crops.							Hay (all kinds).					Green Forage.						Potatoes.		Pumpkins.	Cotton.	Sugar-cane.		Arrowroot.	Peanuts.	Tobacco.	Grapes.	
			Barley.																										
	Wheat.	Oats.	Malting.	Other.	Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	Wheat.	Oats.	Sorghum.	Lucerne.	Other.	Total.	English.	Sweet.			Cut for Crushing.	Other. a				Bearing.	Not Bearing.
Moreton Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Brisbane (North)	..	..	..	..	120	..	..	5	39	70	34	148	63	248	804	168	1,228	2,511	89	72	249	2	..	..	*	4	..	213	20
Brisbane (South)	..	..	..	..	36	..	..	..	5	34	20	59	43	78	290	83	411	905	8	2	28	3	..	..	1	*	..	3	..
Beaudesert	61	6	..	..	4,653	..	..	12	50	2,172	44	2,278	90	2,432	751	2,416	1,080	6,769	211	86	1,029	2	..	..	11	..	..	*	..
Caboolture	..	..	..	..	69	..	..	..	..	19	36	55	4	163	120	11	262	560	33	26	30	4	1	..	1	..	..	*	..
Cleveland	..	..	..	..	1	..	..	..	..	..	..	..	3	8	10	3	91	115	4	8	12	2	..	..	*	13	..	2	3
Crow's Nest	587	40	73	61	5,915	..	..	33	36	1,539	25	1,633	330	4,763	789	1,750	1,516	9,148	209	9	647	..	..	..	..	..	..	1	..
Dugandan	194	6	12	1	7,523	11	..	113	82	3,423	304	3,922	127	3,556	1,761	2,280	1,813	9,537	950	54	1,301	97	..	..	..	*	..	*	..
Esk	33	..	..	..	1,232	..	..	7	22	332	41	402	66	716	260	387	605	2,034	66	46	277	90	..	..	2	..	..	1	2
Gatton	88	..	..	..	4,577	..	..	709	925	3,336	110	5,080	207	2,167	1,861	925	1,177	6,337	1,142	268	3,137	459	..	..	..	..	..	4	4
Harrisville	..	4	..	..	3,887	..	..	298	390	2,677	613	3,978	45	2,594	1,258	1,920	1,391	7,208	140	86	695	69	..	..	2	..	..	*	..
Ipswich	..	..	..	..	567	..	..	20	45	368	60	493	45	522	437	479	523	2,006	100	22	127	109	..	..	..	*	..	..	..
Kilcoy	..	..	..	..	790	..	..	..	1	134	8	143	..	519	112	197	307	1,135	50	75	135	..	..	..	34	..	..	*	..
Laidley	53	4	..	30	5,793	..	..	189	324	3,687	75	4,275	190	1,716	1,210	1,461	1,253	5,830	919	210	1,091	184	..	..	..	..	..	1	..
Logan	..	..	..	..	478	..	..	..	12	138	14	164	26	154	250	133	961	1,524	482	162	71	1	843	716	259	9	..	3	1
Lowood	..	20	..	..	3,470	..	..	18	408	1,016	76	1.518	11	1,376	1,039	856	1,723	5,005	1,029	141	1,465	191	..	..	1	..	..	62	3
Marburg	..	2	..	..	2,177	..	..	..	28	494	111	633	26	880	1,545	504	1,315	4,270	116	77	160	43	..	..	3	3	..	..	..
Maroochy	..	..	..	..	328	..	..	..	..	4	*	4	25	186	221	44	699	1,175	45	39	14	6	4,195	2,768	30	37	..	*	..
Redcliffe	..	..	..	..	252	..	..	..	6	83	24	113	49	284	788	68	1,352	2,541	98	85	162	..	17	7	..	..	..	*	..
Rosewood	..	..	..	..	2,453	..	..	..	94	1,507	219	1,820	40	1,694	1,411	1,551	1,195	5,891	170	41	466	67	..	..	6	..	..	..	..
Southport	..	..	..	..	643	..	..	..	2	13	1	16	26	211	126	13	597	973	182	43	47	..	22	19	375	..	..	1	*
Toogoolawah	..	3	..	..	3,522	..	..	4	..	1,268	8	1,280	5	1,960	933	1,648	693	5,239	202	206	1,071	131	..	..	..	..	7	8	..
Woodford	..	..	..	..	630	..	..	..	..	5	1	6	14	483	109	11	353	970	42	27	78	..	..	..	11	10	..	*	..
Wynnum	..	..	..	..	4	..	..	..	..	..	*	*	..	22	68	1	153	244	20	15	10	2	..	..	..	1	..	10	2
Oakey-Cooyar	199	16	42	25	1,514	..	..	..	4	476	..	480	286	1,659	281	407	437	3,070	97	7	355	4	..	..	..	..	..	*	..
Toowoomba-Helidon	4	9	..	..	977	..	..	14	53	758	65	890	128	1,619	1,324	575	986	4,632	397	158	586	82	..	..	..	..	..	3	..
Total Moreton	1.219	110	127	117	51.611	11	..	1.422	2.526	23.553	1,889	29.390	1,849	30,010	17.758	17,891	22,121	89,629	6,801	1,965	13,243	1.548	5,078	3,510	736	77	7	312	35
Wide Bay Division.																													
Biggenden	..	..	..	..	617	..	..	..	22	174	20	216	10	1,512	432	141	557	2,652	50	14	234	415	75	63	1	6	..	..	1
Bundaberg	..	..	..	..	525	..	..	..	3	103	2	108	..	182	103	58	807	1,150	87	43	53	78	19,882	14,339	5	5	17	2	..
Childers	..	..	..	..	92	..	..	..	..	7	..	7	..	8	7	..	121	136	2	..	12	125	9,556	6,178	..	..	..	*	..
Eidsvold	..	..	..	..	321	..	..	..	3	62	10	75	33	614	348	77	452	1,524	24	69	204	1,570	..	..	..	..	..	*	..
Gayndah	2	..	..	9	2,299	..	..	5	11	649	163	828	46	4,121	4,299	1,145	2,416	12,027	111	87	916	6,499	..	..	..	51	2	1	2
Gin Gin	..	..	..	..	470	..	..	..	11	74	2	87	8	144	90	51	336	629	29	7	31	69	4,700	3,855	..	1	..	2	..
Gympie	..	..	..	..	2,557	..	..	..	33	278	16	327	69	2,275	682	268	2,276	5,570	244	516	267	20	271	236	41	4	..	6	1
Kilkivan	..	..	..	..	285	..	..	..	57	133	14	204	9	294	120	248	276	947	24	37	87	31	..	..	..	..	..	*	..
Maryborough	5	..	..	..	108	..	..	33	33	225	49	340	16	58	51	54	338	517	144	23	31	60	4,231	2,691	..	15	*	10	2
Mount Perry	..	..	..	..	27	..	..	..	..	11	1	12	..	9	..	1	2	12	4	8	1	103	..	..	..	..	..	*	*
Nanango	869	725	49	142	19,727	11	..	..	197	2,857	87	3,141	974	14,008	3,541	3,516	4,998	27,037	325	130	1,448	1,658	..	..	1	9,558	..	6	..
Tiaro	..	..	..	..	433	..	..	2	16	165	7	190	12	241	88	170	244	755	117	34	90	12	1,913	948	6	1	..	7	..
Weinholt	551	481	115	2	20,042	5	..	50	96	3,886	92	4,124	757	17,027	3,579	4,394	7,948	33,705	852	277	2,555	3,684	..	..	6	9,041	..	3	1
Total Wide Bay	1,427	1,206	164	153	47,503	16	..	90	482	8,624	463	9,659	1,934	40,493	13,340	10,123	20,771	86,661	2,013	1,245	5,929	14,324	40,628	28,310	60	18,682	19	37	7
Downs Division.																													
Allora	34,386	540	534	681	6,042	..	..	154	75	1,321	163	1,713	1,111	3,380	1,386	2,696	2,487	11,060	5	..	26	..	..	..	..	..	..	*	..
Chinchilla	1,912	86	47	7	475	..	..	175	99	153	57	484	768	3,244	962	100	985	6,059	10	2	47	338	..	..	..	3	..	6	1
Clifton	47,513	211	4,406	828	11,502	..	..	267	60	1,434	210	1,971	3,217	6,230	4,026	3,792	6,467	23,732	3	..	22	5	..	..	..	..	..	1	..
Condamine	2,999	3	..	6	64	..	..	65	17	111	..	193	289	213	313	502	133	1,450	2	..	2	672	..	..	..	..	..	4	..
Dalby	84,534	594	222	128	1,007	..	..	140	43	413	..	596	6,539	13,579	5,256	695	4,051	30,120	..	1	140	444	..	..	..	1	..	2	1
Goondiwindi	603	100	..	..	8	..	..	96	7	222	..	325	55	53	136	45	19	308	..	..	5	..	..	..	..	..	15	*	..
Inglewood	2,608	99	3	36	37	12	..	58	85	177	41	361	442	925	237	208	414	2,226	1	..	4	12	..	..	..	..	368	1	7
Killarney	9,516	405	64	52	6,760	..	..	105	4	1,645	..	1,754	204	2,267	907	1,832	892	6,102	35	..	7	..	..	..	..	..	..	1	..
Oakey	78,481	1,778	893	615	7,404	21	..	476	305	2,860	211	3,852	13,681	23,163	15,630	2,578	8,333	63,385	106	3	597	15	..	..	..	..	..	5	5

Pittsworth	89,300	972	1,945	457	2,837	..	..	466	59	1,407	311	2,243	11,579	13,570	17,745	3,944	4,450	51,288	5	..	131	229	..	..	..	..	..	1	..
Stanthorpe	..	..	..	..	213	..	..	23	61	115	13	212	74	142	9	209	176	610	169	1	51	..	..	..	..	..	5	1,337	394
Texas	347	..	..	..	44	..	..	11	52	204	7	274	69	168	38	470	136	881	..	..	21	10	..	..	..	..	296	*	..
Toowoomba	18,903	625	1,054	264	6,249	5	..	436	358	2,433	73	3,300	3,484	11,595	5,644	3,663	5,747	30,133	117	1	122	..	..	..	..	14	..	8	..
Warwick	32,696	1,919	845	320	10,535	..	..	425	337	3,660	92	4,514	1,363	7,111	3,173	4,918	3,702	20,267	116	1	119	6	..	..	..	..	..	27	6
Total Downs ..	403,798	7,332	10,013	3,394	53,177	38	..	2,897	1,562	16,155	1,178	21,792	42,875	85,640	55,462	25,652	37,992	247,621	569	9	1,294	1,731	..	..	..	18	684	1,393	414
Maranoa Division.																													
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Dirranbandi	..	..	..	..	..	..	..	..	8	..	..	8	30	..	..	64	..	94	..	..	..	..	..	..	..	..	..	5	..
Mitchell	1,257	..	..	..	15	..	..	140	..	..	..	140	386	46	106	..	..	538	..	..	..	..	..	..	..	..	..	2	..
Roma	28,855	..	..	..	53	..	..	1,738	..	..	10	1,748	2,191	190	324	..	199	2,904	..	2	22	150	..	..	..	..	..	424	57
St. George	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	30	..	..	1	..	..	..	..	..	..	2	..
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Yuleba	70	..	..	..	7	..	..	5	5	*	..	10	..	3	..	..	..	3	..	..	2	..	..	..	..	..	..	5	..
Total Maranoa ..	30,182	..	..	..	75	..	..	1,883	13	..	10	1,906	2,637	239	430	64	199	3,569	..	2	25	150	..	..	..	..	..	438	57
South-Western Division.																													
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..	..	*	..	..	..	..	..	..	..	..	..	*	..
Charleville	..	..	..	..	..	..	..	..	..	..	..	..	13	3	..	..	..	16	..	..	2	..	..	..	..	..	..	1	*
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	40	..	..	..	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total SouthWestern-	..	..	..	..	..	..	..	40	..	..	..	40	13	3	..	..	..	16	..	..	2	..	..	..	..	..	..	1	..
Total South Queensland	*436,626*	*8,648*	*10,304*	*5,664*	*152,366*	*65*	..	*6,332*	*4,583*	*48,332*	*3,540*	*62,787*	*49,508*	*156,385*	*86,990*	*53,730*	*81,083*	*427,496*	*9,383*	*3,221*	*20,493*	*17,753*	*45,706*	*31,820*	*796*	*18,777*	*710*	*2,181*	*513*
Port Curtis Division.																													
Banana	1,042	..	..	..	18	..	..	25	12	21	60	118	10	30	41	47	18	146	2	3	15	1,621	..	..	..	..	..	1	..
Gladstone	8	..	..	..	883	..	..	2	24	230	87	343	9	532	300	296	778	1,915	320	9	158	239	..	..	..	27	277	[illegible]	..
Monto	100	..	..	..	2,745	..	..	..	15	1,029	33	1,077	163	3,368	651	2,826	2,419	9,427	115	11	806	4,234	..	..	1	37	..	[illegible]	..
Mount Morgan ..	4,101	2	..	21	1,491	..	..	187	116	73	35	411	740	1,358	446	274	1,832	4,650	75	4	265	40,739	..	..	..	32	..	[illegible]	..
Rockhampton ..	18	..	..	..	936	..	..	32	132	298	175	637	44	270	376	86	686	1,462	104	57	244	1,388	..	..	..	1,176	..	[illegible]	6
St. Lawrence ..	..	..	..	..	33	..	..	..	..	77	..	77	..	..	..	20	..	20	3	1	20	7	127	20	..	..	..	..	..
Taroom	102	..	..	..	..	..	..	3	..	..	7	10	..	..	..	4	8	12	..	..	1	80	..	..	..	..	..	..	..
Total Port Curtis..	5,371	2	..	21	6,106	..	..	249	299	1,728	397	2,673	966	5,558	1,814	3,553	5,741	17,632	619	85	1,509	48,308	127	20	1	1,272	277	49	6
Central-Western Division.																													
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Blackall	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	3	*	..	..	..	..	..	..	..	1	..
Clermont	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Emerald	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	3	..	..	..	..	..	..	*	..
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	1	..
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	7	..	..	..	47	..	..	..	..	..	*	..
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	1	..
Total Central-Western	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	12	12	10	..	4	47	..	..	..	..	..	3	..
Far Western Division.																													
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Total Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Total Central Queensland ..	*5,371*	*2*	..	*21*	*6,106*	..	..	*249*	*299*	*1,729*	*397*	*2,674*	*966*	*5,558*	*1,814*	*3,553*	*5,753*	*17,644*	*629*	*85*	*1,513*	*48,355*	*127*	*20*	*1*	*1,272*	*277*	*53*	*6*

*** Less than ½ acre.**

a Excluding cut for green fodder.

Table No. 28—*continued.*

GRAIN AND OTHER CROPS—AREAS, 1938. (For Production see Table 31.)

Division.	Grain Crops.							Hay (all Kinds).					Green Forage.						Potatoes.				Sugar-cane. a					Grapes.	
			Barley.																										
	Wheat.	Oats.	Malting.	Other.	Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	Wheat.	Oats.	Sorghum.	Lucerne.	Other.	Total.	English.	Sweet.	Pumpkins.	Cotton.	Cut for Crushing.	Other.	Arrowroot.	Peanuts.	Tobacco.	Bearing.	Not Bearing.
Edgecumbe Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Ayr	..	..	..	..	85	..	..	..	..	2	..	2	..	..	49	..	52	101	59	1	42	125	24,916	13,706	..	1	21	..	..
Bowen	..	..	..	..	62	..	..	..	..	..	2	2	..	..	125	1	80	206	59	3	403	69	157	81	..	2	85	1	..
Charters Towers ..	..	..	..	..	11	..	..	..	..	1	..	1	..	..	1	1	3	5	9	4	22	2	..	..	..	*	..	21	2
Collinsville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	3	7	..	..	..	..	..	..	..
Mackay	..	..	..	..	193	..	..	..	..	..	5	5	..	3	57	..	986	1,046	40	3	61	27	67,432	28,535	..	..	325	1	*
Proserpine	..	..	..	..	5	..	..	..	..	..	..	..	3	6	3	..	18	30	14	2	8	..	9,365	3,426	..	..	..	..	..
Ravenswood ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Townsville	..	..	..	..	11	..	..	..	..	*	8	8	..	..	77	..	11	88	59	1	27	..	290	44	..	..	83	*	..
Total Edgecumbe ..	..	..	..	..	367	..	..	..	..	3	15	18	3	9	312	4	1,150	1,478	240	14	567	230	102,160	45,792	..	3	514	23	2
Rockingham Division.																													
Atherton	..	..	..	..	23,749	..	..	33	7	162	22	224	62	211	226	93	672	1,264	36	104	9	..	..	..	..	496	4	*	..
Cairns	..	..	..	..	5	..	..	..	..	..	1	1	..	..	1	..	163	164	3	4	21	82	31,458	4,746	..	2	..	..	..
Cardwell	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	163	163	7	3	9	14	9,670	2,473	..	..	..	..	..
Chillagoe	..	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	3	..	*	*	..	..	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	28	..	..	..	..	6,381	2,601	..	*	..	..	..
Herberton	..	..	..	..	467	..	..	14	10	2	..	26	..	2	6	15	26	49	18	4	3	..	..	..	..	..	4	8	2
Ingham	..	..	..	..	118	..	..	..	..	..	..	..	..	..	18	..	89	107	28	12	30	1	26,883	3,682	..	*	9	..	..
Innisfail	..	..	..	..	29	..	..	..	..	..	..	..	..	..	6	..	102	108	2	1	1	..	29,462	4,218	..	..	..	..	3
Mareeba	20	..	..	..	115	..	..	..	2	..	..	2	..	..	12	..	120	132	41	11	32	30	..	..	..	572	2,222	..	..
Total Rockingham ..	20	..	..	..	24,499	..	..	47	19	164	23	253	62	213	272	108	1,363	2,018	135	139	105	127	103,854	17,710	..	1,070	2,239	8	5
Peninsula Division.																													
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	77	..	..	..	..	..	..	..	..	..	..	..	7	7	..	..	2	5	..	..	..	98	..	..	..
Somerset	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	1	..	..	..	..	..	..	..	..
Total Peninsula ..	..	..	..	..	77	..	..	..	..	..	..	..	..	..	..	..	7	7	..	6	3	5	..	..	..	98	..	..	..
North-Western Division.																													
Burke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	*	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	2	..
Total North Queensland ..	*20*	..	..	..	*24,943*	..	..	*47*	*19*	*167*	*38*	*271*	*65*	*222*	*584*	*112*	*2,520*	*3,503*	*377*	*159*	*676*	*362*	*206,014*	*63,512*	..	*1,171*	*2,753*	*33*	*7*
Grand Total, State—																													
1938	442,017	8,650	10,304	3,685	183,415	65	..	6,628	4,901	50,228	3,975	65,732	50,339	162,165	89,388	57,395	89,356	448,643	10,389	3,465	22,682	66,470	251,847	95,352	797	21,220	3,740	2,267	526
1937	372,935	7,709	5,923	2,732	174,243	2	..	6,004	4,187	51,084	12,354	73,629	55,116	123,743	86,882	54,004	121,815	441,560	10,817	2,774	24,391	52,692	245,131	103,709	774	12,370	3,812	2,224	492
Increase, 1938 ..	69,082	941	4,381	953	9,172	63	..	624	714	..	..	..	..	38,422	2,506	3,391	..	7,083	..	691	..	13,778	6,716	..	23	8,850	..	43	34
Decrease, 1938 ..	..	..	..	..	..	..	..	..	..	856	8,379	7,897	4,777	..	..	..	32,459	..	428	..	1,709	..	..	8,357	..	..	72	..	..

* Less than ½ acre.

a Excluding cut for Green Fodder.

FRUIT CROPS—AREAS, 1938. (For Production see Table 32.)

Division.	Apples.		Apricots.		Bananas.		Cherries.	Custard Apples.		Figs.	Gooseberries (Cape).	Lemons.		Mangoes.		Nectarines.		Oranges and Mandarins.		Papaws.		Passion Fruit.	Peaches.		Pears.		Persimmons.	Pineapples.		Plums.		Quinces.	Strawberries.	Water Melons and Rock Melons.	Small Orchards.
	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.			Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.				
Moreton Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Brisbane (North) ..	*	..	*	..	153	99	..	6	2	..	..	1	3	9	2	..	..	2	4	184	46	17	47	14	..	..	..	297	129	1	*	..	11	135	6
Brisbane (South) ..	..	..	..	..	2	1	..	15	4	17	1	*	2	2	*	..	..	3	8	111	33	1	..	*	..	..	*	130	48	..	..	..	3	4	7
Beaudesert	*	*	*	*	10	..	..	..	*	..	..	*	*	*	*	..	..	23	*	*	..	..	*	*	*	*	..	..	..	*	*	..	..	2	4
Caboolture	..	..	..	..	257	110	..	1	1	..	1	4	3	3	1	..	..	88	25	3	3	12	*	*	..	..	..	475	183	*	..	..	4	4	8
Cleveland	..	..	..	..	112	66	..	94	19	1	..	10	5	2	*	..	..	11	2	32	26	56	..	1	..	..	1	221	88	..	1	..	89	10	4
Crow's Nest	*	*	*	*	..	..	..	..	..	..	..	32	3	..	..	..	..	33	2	..	..	*	*	1	*	*	..	..	..	*	*	..	..	*	3
Dugandan	*	*	..	*	..	..	..	*	*	..	..	1	*	*	1	..	..	4	1	*	1	2	1	1	..	..	..	2	*	*	*	..	..	4	1
Esk	*	*	*	*	11	9	..	..	..	..	..	11	4	*	*	..	..	60	5	*	..	9	*	*	..	..	..	*	..	..	..	*	..	2	2
Gatton	..	*	*	*	..	..	..	..	..	1	..	*	1	..	..	..	..	125	28	..	..	..	*	*	..	*	*	20	6	..	*	..	..	23	4
Harrisville	..	*	..	*	..	..	..	..	..	..	..	*	*	*	*	..	..	1	1	..	..	..	1	*	..	..	..	*	..	..	..	..	..	*	2
Ipswich	..	..	..	..	..	*	..	*	*	..	..	..	*	2	*	..	..	9	2	*	..	1	*	*	..	..	..	44	2	..	..	..	*	8	1
Kilcoy	..	..	..	..	23	10	..	..	..	..	..	*	..	..	..	..	..	3	..	*	..	..	..	..	..	..	..	*	*	..	..	..	..	*	1
Laidley	*	*	*	*	2	..	..	..	*	*	..	*	1	*	*	..	..	4	*	1	..	..	*	*	*	..	..	3	2	*	*	..	..	1	3
Logan	..	..	..	..	574	177	..	88	10	*	..	5	10	34	3	..	..	39	3	3	8	125	*	*	*	..	..	44	25	..	..	..	*	9	3
Lowood	..	..	..	..	..	..	..	..	*	..	..	1	*	..	*	..	..	24	1	..	..	..	*	*	..	..	..	30	2	..	..	..	..	1	1
Marburg	..	..	*	*	..	*	..	..	..	..	7	*	*	1	*	..	..	1	*	*	*	..	2	*	..	..	..	13	..	*	*	..	..	1	2
Maroochy	..	*	..	..	1,046	483	..	8	3	*	..	11	6	6	3	..	..	718	214	70	32	20	*	*	*	*	*	2,178	737	..	1	..	89	8	47
Redcliffe	..	*	..	..	152	126	..	1	1	*	..	2	*	6	*	..	..	6	2	6	5	11	*	*	..	..	..	97	54	*	*	..	2	43	16
Rosewood	..	*	*	*	..	..	..	..	..	..	3	*	*	*	*	..	..	1	*	..	..	..	*	*	..	..	..	*	..	..	*	..	..	1	2
Southport	*	*	*	*	2,215	570	..	3	*	..	..	*	*	2	*	..	*	110	52	3	*	41	*	*	*	*	*	4	7	*	*	..	*	6	37
Toogoolawah ..	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	2	1	..	..	*	*	..	*	..	*	..	..	..	..	..	..	1	1
Woodford	*	..	..	..	374	71	..	*	..	..	..	1	1	*	*	..	..	5	1	*	1	*	*	..	*	..	..	18	..	*	*	..	..	*	2
Wynnum	..	..	..	..	15	11	..	2	1	..	..	*	..	..	*	..	..	..	*	33	27	7	..	*	..	..	..	45	32	..	..	..	7	5	4
Oakey-Cooyar ..	*	..	*	*	..	..	..	..	..	..	..	*	..	..	..	*	..	1	*	..	..	..	*	*	*	..	..	..	..	*	*	..	..	1	2
Toowoomba-Helidon	..	*	*	*	..	..	..	..	..	..	..	1	2	*	1	..	..	49	23	..	..	..	*	*	..	*	..	..	..	..	*	..	..	10	1
Total Moreton ..	..	..	..	..	4,946	1,733	..	218	41	19	12	80	41	67	11	..	..	1,322	375	446	182	302	51	17	..	..	1	3,621	1,315	1	2	..	205	279	164
Wide Bay Division.																																			
Biggenden	..	..	..	..	9	3	..	..	..	..	..	..	1	..	3	..	..	3	16	..	1	..	..	..	..	..	..	5	1	..	..	..	..	2	*
Bundaberg	..	*	..	*	74	25	..	7	3	..	..	1	3	6	1	..	..	81	30	1	6	4	1	*	*	*	*	68	7	..	*	..	3	13	4
Childers	..	..	..	..	..	..	..	*	*	..	..	*	..	2	*	..	..	80	4	*	..	*	*	*	..	..	*	20	1	..	..	..	..	1	3
Eidsvold	..	..	..	*	..	..	..	..	..	..	..	15	26	..	..	..	..	5	7	..	..	..	1	*	*	..	..	..	..	1	..	..	..	24	1
Gayndah	..	*	..	*	13	2	..	1	*	*	..	80	31	11	13	..	..	172	76	1	2	7	1	*	..	*	..	8	2	..	*	..	..	6	7
Gin Gin	..	*	..	*	3	..	..	1	*	..	..	1	*	4	1	..	..	12	4	*	1	1	1	*	..	*	..	3	..	..	*	..	..	1	2
Gympie	*	*	..	*	736	349	..	1	1	*	*	3	5	14	10	..	..	49	11	27	22	5	1	1	*	*	*	724	268	..	*	..	2	9	33
Kilkivan	..	*	..	*	..	1	..	..	*	..	..	*	*	*	*	..	..	1	*	..	..	*	..	*	..	..	..	*	5	..	*	..	..	*	2
Maryborough ..	*	*	..	..	14	13	1	2	1	..	..	2	3	11	3	..	..	447	90	11	4	4	*	*	*	..	*	130	25	*	*	..	*	35	6
Mount Perry ..	..	*	..	*	3	..	..	*	*	..	..	*	*	1	*	..	..	7	*	..	..	*	..	*	..	..	..	*	..	..	*	..	..	1	2
Nanango	*	*	1	*	..	..	..	..	..	..	..	2	1	..	*	..	..	6	1	..	..	*	2	*	*	*	..	3	2	*	*	..	..	2	3
Tiaro	..	*	..	*	28	6	..	1	*	..	..	1	*	9	..	..	..	16	5	17	2	1	1	..	*	..	..	53	11	*	*	..	..	2	39
Wienholt	*	*	1	*	*	*	..	*	*	*	..	1	*	*	*	..	*	10	2	..	..	1	2	*	*	*	*	2	*	*	*	..	*	2	6
Total Wide Bay ..	..	..	2	..	880	399	1	13	5	..	..	106	70	58	31	..	..	889	246	57	38	23	10	1	..	..	..	1,016	322	1	..	..	5	98	108
Downs Division.																																			
Allora	..	*	1	*	..	..	..	..	..	..	..	*	*	..	..	..	..	40	15	..	..	..	*	*	..	*	..	..	..	*	*	..	..	1	1
Chinchilla	*	*	*	*	..	..	..	..	..	*	..	*	*	..	..	..	..	3	10	..	..	..	1	*	..	*	..	..	..	*	*	..	..	2	2
Clifton	*	*	1	*	..	..	..	..	..	*	..	*	*	..	..	..	..	1	*	..	..	..	*	*	*	*	..	..	..	*	*	..	..	..	2
Condamine	*	*	*	*	..	..	..	..	..	..	..	*	*	..	..	..	..	3	*	..	..	..	1	*	*	*	..	..	..	*	*	..	..	1	2
Dalby	..	*	*	*	..	..	..	..	..	*	..	1	1	..	..	..	..	6	2	..	..	..	*	*	*	*	..	..	..	*	*	..	..	1	2
Goondiwindi ..	..	..	..	*	..	..	..	..	..	..	..	2	*	..	..	..	..	10	*	..	..	..	..	*	..	..	..	..	..	..	*	..	..	3	1
Inglewood	..	*	1	*	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	1	1	*	*	..	..	..	*	*	..	*	1	3
Killarney	*	..	*	*	..	..	..	..	..	..	..	*	..	..	..	*	..	1	*	..	..	*	*	*	*	*	..	..	..	*	*	*	..	1	2
Oakey	*	*	2	*	..	..	..	..	..	..	..	1	*	..	..	..	..	6	3	..	..	..	2	*	*	*	..	..	..	1	*	..	..	1	2
Pittsworth	..	*	*	*	..	..	..	..	..	..	..	*	*	..	*	..	..	*	*	..	..	..	*	1	*	*	..	..	..	*	*	..	..	*	3
Stanthorpe	3,115	2,247	130	70	..	..	4	..	..	*	..	..	..	..	..	34	6	..	..	..	..	2	1,012	252	242	107	..	..	..	909	266	12	..	5	3
Texas	..	..	*	..	..	..	..	..	..	*	..	*	..	..	..	..	..	*	..	..	..	..	*	..	*	..	*	..	..	*	..	..	..	1	1
Toowoomba	1	1	6	2	..	..	..	..	..	..	..	3	3	*	*	..	..	16	4	..	..	..	5	1	1	*	..	..	..	3	1	..	..	..	2
Warwick	129	84	22	8	..	..	..	..	..	*	..	*	*	..	..	1	..	1	*	..	..	..	7	1	8	2	..	..	..	25	2	1	..	*	2
Total Downs ..	3,245	2,332	163	80	..	..	4	..	..	..	..	7	4	..	..	35	6	87	34	..	..	2	1,029	256	251	109	..	..	..	938	269	13	..	17	28

* Less than ½ acre. When these areas in any district aggregate approximately 1 acre or more they are included under "Small Orchards."

Table No. 29—*continued.*

FRUIT CROPS—AREAS, 1938. (For Production see Table 32.)

Division.	Apples.		Apricots.		Bananas.		Cherries.	Custard Apples.		Figs.	Gooseberries (Cape.)	Lemons.		Mangoes.		Nectarines.		Oranges and Mandarins.		Papaws.		Passion Fruit.	Peaches.		Pears.		Persimmons.	Pineapples.		Plums.		Quinces.	Strawberries.	Water Melons and Rock Melons.	Small Orchards.
	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.			Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.				
	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Maranoa Division.																																			
Bollon	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Dirranbandi	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	2	*
Mitchell	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	2	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	2
Roma	..	*	*	*	..	..	..	..	..	..	..	*	1	..	..	..	..	50	37	..	..	..	1	*	*	*	..	..	..	..	*	..	..	9	2
St. George	..	*	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	1	..	..	..	..	1	..	*	..	..	..	..	*	..	..	..	2	1
Surat	..	..	*	*	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	..	*	..	..	..	..	..	..	*	..	..	..	*	2
Yeulba	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	2
Total Maranoa	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	57	37				2	..	..	..				..	..	..	..	13	10
South-Western Division.																																			
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Augathella	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	1	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	1
Charleville	..	..	*	..	..	..	..	..	..	..	..	1	1	..	..	..	..	21	2	..	..	..	*	..	..	..	..	..	..	..	..	..	..	*	2
Cunnamulla	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	3	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	*	1
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	*
Thargomindah	..	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	*
Total South-Western	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	26	2	..	..			..						..	..	..	..	..	4
Total South Queensland	*3,245*	*2,332*	*165*	*80*	*5,826*	*2,132*	*5*	*231*	*46*	*19*	*12*	*194*	*117*	*125*	*42*	*35*	*6*	*2,381*	*694*	*503*	*220*	*327*	*1,092*	*274*	*251*	*109*	*1*	*4,637*	*1,637*	*940*	*271*	*13*	*210*	*407*	*314*
Port Curtis Division.																																			
Banana	..	..	*	..	..	..	..	..	..	..	..	*	*	..	*	..	..	1	2	..	..	..	*	*	..	..	..	..	..	*	..	..	..	2	2
Gladstone	..	*	..	*	76	28	..	2	1	..	..	3	1	7	2	..	..	42	10	83	53	6	1	*	*	*	*	19	6	..	*	..	..	27	4
Monto	..	..	..	..	..	..	..	..	..	..	..	*	*	..	1	..	..	3	2	..	..	..	*	*	..	..	..	..	..	..	..	..	..	2	1
Mount Morgtn	..	..	..	..	*	..	..	1	*	*	..	1	1	3	1	..	*	19	6	*	..	..	*	*	..	*	*	6	..	..	*	..	..	9	3
Rockhampton	..	..	..	*	183	98	..	13	3	..	..	12	3	33	5	..	..	208	25	34	24	14	1	*	..	..	*	172	36	..	*	..	2	37	3
St. Lawrence	..	*	..	..	8	2	..	*	*	..	..	*	*	3	*	..	..	3	1	..	..	1	..	..	..	..	..	13	3	..	..	..	..	1	1
Taroom	..	*	..	*	..	..	..	..	..	..	..	*	*	..	..	..	..	3	4	..	..	..	*	*	..	*	..	..	..	*	*	..	..	*	1
Total Port Curtis	..	..	..	..	267	128	..	16	4	..	..	16	5	46	9	..	..	279	50	117	77	21	2	..	..	..	..	210	45	..	..	..	2	78	15
Central-Western Division.																																			
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	3	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	*	1
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	*
Blackall	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	1	6	..	..	..	2	2	*	..	..	..	..	..	..	..	..	2	1
Clermont	*	..	*	..	..	..	..	..	..	..	..	*	*	..	..	..	..	3	*	..	..	..	*	*	*	..	*	..	..	*	..	..	..	*	2
Emerald	..	..	..	..	*	..	..	*	*	..	..	6	1	*	*	..	..	41	17	*	..	..	..	*	..	..	..	..	..	..	..	..	..	*	1
Longreach	..	..	..	..	..	..	..	..	..	..	..	*	*	*	1	..	..	1	1	..	..	..	*	*	..	..	..	..	..	..	..	..	..	1	2
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	*	..	..	..	*	..	..	..	1	*	*	*	..	..	4	1	..	..	..	1	*	..	..	..	..	..	..	*	..	..	*	1
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Total Central-Western	..	..	..	..	..	..	..	..	..	..	..	7	1	..	1	..	..	55	25	..	..	..	3	2	..	..	..	..	..	..	..	..	..	4	9

Far-Western Division.																																			
Boulia	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	*
Jundah	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	*	..	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
Total Central Queensland ..	..	..	..	..	267	128	..	16	4	..	..	23	6	46	10	..	..	334	75	117	77	21	5	2	..	..	..	210	45	..	..	..	2	83	26
Edgecumbe Division																																			
Ayr	..	..	..	..	24	14	..	1	*	..	..	1	2	4	*	..	..	3	1	*	..	*	..	..	..	..	..	5	32	..	..	..	..	4	1
Bowen	..	..	..	..	10	5	..	5	2	..	..	2	1	141	55	..	..	28	10	*	*	*	..	*	..	..	..	170	89	..	*	..	*	10	2
Charters Towers	..	..	..	..	*	..	..	*	*	..	..	3	1	1	5	..	..	94	27	*	..	..	1	*	..	..	..	..	..	..	..	..	*	6	2
Collinsville	..	..	..	..	..	..	..	..	*	..	..	*	*	..	*	..	..	1	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Mackay	..	*	..	*	91	16	..	11	6	..	..	15	9	54	7	..	..	74	23	17	5	*	1	*	*	*	*	22	12	..	*	..	..	7	2
Proserpine	..	..	..	..	7	..	..	2	1	..	..	2	2	11	2	..	..	12	3	..	..	..	*	*	..	..	..	1	*	..	..	..	..	1	1
Ravenswood	..	..	..	..	..	..	..	*	..	..	..	*	..	*	*	..	..	5	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Townsville	..	..	..	..	26	4	..	2	*	..	..	7	1	16	10	..	..	25	6	8	1	*	..	..	..	..	..	75	21	..	..	..	1	12	1
Total Edgecumbe..	..	..	..	..	158	39	..	21	9	..	..	30	16	227	79	..	..	242	72	25	6	..	2	..	..	..	..	273	154	..	..	..	1	42	11
Rockingham Division.																																			
Atherton	*	*	..	*	9	1	..	1	*	..	..	2	*	2	*	..	..	15	4	*	..	..	*	*	*	*	*	2	..	*	*	..	..	*	4
Cairns	..	..	..	..	131	1	..	1	*	..	..	3	1	4	2	..	..	52	15	14	2	*	*	*	..	..	..	53	3	..	..	..	..	12	2
Cardwell	..	..	..	..	34	9	..	..	2	..	..	4	1	1	1	..	..	256	56	*	..	*	..	*	..	..	..	2	3	*	..	..	..	1	1
Chillagoe	..	..	..	..	..	..	..	..	*	..	..	*	*	1	..	..	..	*	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Douglas	..	..	..	..	*	..	..	*	*	..	..	*	*	4	*	..	..	4	1	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	2
Herberton	1	*	*	*	*	..	..	*	*	..	..	1	*	*	*	..	..	5	2	..	..	..	*	*	*	*	*	..	..	3	2	..	..	*	4
Ingham	..	..	..	..	7	2	..	2	1	..	..	5	1	16	1	..	..	23	4	*	*	*	1	*	..	..	..	9	3	*	..	..	..	*	1
Innisfail	..	..	..	..	16	3	..	*	*	..	..	1	1	1	1	..	..	23	6	*	3	1	..	..	..	..	..	9	5	..	..	..	..	5	8
Mareeba	..	*	..	..	8	2	..	*	1	*	..	1	4	4	2	..	..	12	6	*	..	2	*	*	..	..	..	3	..	..	*	..	..	30	1
Total Rockingham	1	..	..	..	205	18	..	4	4	..	..	17	8	33	7	..	..	390	95	14	5	3	1	..	..	..	..	78	14	3	2	..	..	48	24
Peninsula Division.																																			
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	2	1	..	*	..	..	..	..	*	2	*	..	..	40	4	*	..	..	..	..	..	..	..	*	1	..	..	..	..	..	2
Somerset	..	..	..	..	1	1	..	..	*	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Total Peninsula ..	..	..	..	..	3	2	..	..	..	..	..	..	..	2	1	..	..	40	4	1	..	..	..	..	..	..	..	..	1	..	..	..	..	.	2
North-Western Division.																																			
Burke	..	..	..	..	2	..	..	*	..	..	..	*	*	1	2	..	..	*	*	1	..	..	..	..	..	..	..	..	..	..	..	..	..	*	3
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	1	..	*	*	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Croydon	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Etheridge	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	3	*	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	2
Hughenden	..	..	..	*	..	..	..	..	..	..	..	1	*	*	..	..	..	8	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	1	..	..	..	..	..	..	..	*	*	*	..	..	1	*	*	..	..	..	..	..	..	..	*	..	..	..	..	..	*	1
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	..	..	3	..	..	..	..	..	..	2	..	1	2	..	..	15	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	8
Total North Queensland ..	*1*	..	..	..	*369*	*59*	..	*25*	*13*	..	..	*49*	*24*	*263*	*89*	..	..	*687*	*173*	*41*	*11*	*3*	*3*	..	..	..	..	*351*	*169*	*3*	*2*	..	*1*	*94*	*45*
Grand Total, State—																																			
1938	3,246	2,332	165	80	6,462	2,319	5	272	63	19	12	266	147	434	141	35	6	3,402	942	661	308	351	1,100	276	251	109	1	5,198	1,851	943	273	13	213	584	385
1937	3,315	2,314	184	98	5,288	2,886	8	248	51	35	8	228	168	449	105	48	6	3,297	1,027	442	389	284	1,088	242	232	87	1	4,228	2,321	945	268	12	186	612	288
Increase, 1938 ..	..	18	..	..	1,174	..	..	24	12	..	4	38	..	..	36	..	..	105	..	219	..	67	12	34	19	22	..	970	..	..	5	1	27	..	97
Decrease, 1938 ..	69	..	19	18	..	567	3	..	..	16	..	..	21	15	..	13	..	..	85	..	81	..	..	..	..	..	..	..	470	2	..	..	..	28	..

* Less than ½ acre. When these areas in any district aggregate approximately 1 acre or more they are included under "Small Orchards."

Table No. 30.

VEGETABLE AND MISCELLANEOUS CROPS, AREAS ; AREA UNDER CROP, &c., 1938. (For Production see Table 33.)

Division.	Vegetables.										Miscellaneous Crops.													Total Areas, &c.	
	Beans.					Peas.													Millet.						
	Green.	Dried.	Cabbages and Cauliflowers.	Cucumbers.	Onions.	Green.	Dried.	Tomatoes.	Turnips.	Market Gardens.	Canary Seed, for Grain.	Coffee.	Coconuts.	Cow Peas, for Grain.	Grass for Seed.	Linseed.	Lucerne for Seed.	Mangel Wurzel.	Broom.	Seed.	Panicum for Seed.	Sunflower Seed.	Other.	Total Extent of Land under Crop.	Total Area of Petty Sessions Districts.
Moreton Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac	Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Mls.
Brisbane (North)	116	16	214	37	..	135	6	268	5	331	..	..	..	..	*	..	..	5	..	..	1	..	..	5,747	336
Brisbane (South)	42	*	76	14	..	25	*	62	3	129	..	..	..	..	..	..	..	..	..	..	..	..	..	1,771	213
Beaudesert	1	*	1	*	2	1	1	4	2	1	4	..	..	..	*	..	..	126	..	..	2	..	..	15,290	968
Caboolture	6	..	1	2	..	4	..	5	3	2	..	..	..	..	..	..	..	2	..	..	3	..	..	1,993	304
Cleveland	165	33	201	113	..	13	2	523	..	220	..	..	..	..	..	..	..	1	..	..	..	..	..	2,282	200
Crow's Nest	..	..	..	..	..	..	..	..	..	2	..	..	..	..	13	..	..	15	..	..	..	..	..	18,427	365
Dugandan	39	..	16	24	4	17	*	34	11	19	5	..	..	..	..	..	..	151	15	..	27	..	..	23,989	522
Esk	..	..	2	..	..	1	..	..	2	3	..	..	..	..	..	..	..	22	..	..	..	..	..	4,328	563
Gatton	2	1	50	3	437	2	..	5	9	20	6	..	..	..	2	..	..	125	..	..	..	..	..	21,966	504
Harrisville	6	*	1	1	1	8	..	12	3	8	..	..	..	..	..	..	..	79	..	..	7	..	..	16,200	230
Ipswich	20	1	6	4	*	14	1	6	1	20	..	..	..	..	..	..	..	13	..	..	..	..	..	3,579	228
Kilcoy	1	..	..	..	..	..	..	1	..	3	..	..	..	..	10	..	..	40	..	..	..	..	..	2,454	305
Laidley	4	..	4	*	245	10	..	6	3	*	23	..	..	..	14	..	..	79	130	2	14	4	..	18,945	222
Logan	146	9	99	14	..	136	..	146	2	54	..	..	..	..	5	..	..	2	..	..	3	..	..	6,489	239
Lowood	4	..	1	2	193	8	*	3	4	29	..	..	..	..	4	..	..	93	3	..	13	..	..	13,322	208
Marburg	13	3	2	1	2	32	10	36	*	3	..	..	..	..	8	..	..	58	..	..	8	..	..	7,687	53
Maroochy	200	55	4	19	..	20	*	22	1	24	..	12	..	..	*	..	..	6	..	..	..	..	2*a*	14,686	702
Redcliffe	25	5	41	30	..	22	1	59	1	15	1	..	..	..	..	..	..	1	..	..	4	..	..	4,010	252
Rosewood	3	..	..	..	1	8	*	4	1	1	..	..	..	..	..	..	..	56	..	..	6	..	..	11,001	264
Southport	55	5	30	3	..	17	..	5	3	6	..	..	..	..	2	..	..	2	..	..	..	..	..	5,499	502
Toogoolawah	..	1	*	*	1	*	..	2	1	2	1	..	..	..	..	..	..	176	..	..	..	..	..	11,858	801
Woodford	2	..	..	..	..	..	..	..	3	2	..	..	..	..	..	..	..	13	..	..	..	..	..	2,268	202
Wynnum	16	6	4	9	..	22	3	71	*	20	..	..	..	..	..	..	..	..	..	..	1	..	..	649	28
Oakey-Cooyar	..	..	..	..	..	..	..	..	..	6	*	..	..	..	7	..	..	17	..	..	*	..	..	5,843	225
Toowoomba-Helidon	6	..	11	6	9	8	1	15	11	6	..	..	..	..	..	..	..	28	..	..	4	..	..	7,930	252
Total Moreton	872	135	764	282	895	503	25	1,289	69	926	40	12	..	..	65	..	..	1,110	148	2	93	4	2*a*	228,213	8,688
Wide Bay Division.																									
Biggenden	..	..	1	1	..	..	..	2	2	2	..	..	..	..	5	..	..	23	..	..	5	..	..	4,429	653
Bundaberg	2	*	18	4	..	7	2	24	..	46	..	..	..	..	..	..	..	1	3	..	..	..	..	36,739	1,460
Childers	..	..	2	*	..	2	1	1	1	*	..	..	..	..	..	..	..	..	..	..	..	..	..	16,226	647
Eidsvold	1	..	2	..	1	..	..	..	1	1	..	..	..	..	..	..	..	29	17	..	..	..	..	3,919	2,383
Gayndah	1	..	2	*	*	1	..	3	1	4	..	..	..	75	98	..	..	139	116	3	31	..	..	23,741	3,727
Gin Gin	..	..	2	*	..	..	..	1	..	2	..	..	..	..	1	..	..	1	7	..	..	..	..	9,929	1,056
Gympie	760	144	31	25	*	25	1	15	6	28	..	7	..	..	..	..	..	40	5	..	..	..	..	13,418	2,218
Kilkivan	1	..	..	..	..	..	1	..	..	6	..	..	..	..	*	..	..	12	..	..	..	..	..	1,644	319
Maryborough	4	4	15	2	*	12	*	21	4	4	..	..	..	..	..	..	..	1	..	..	..	..	..	9,046	1,697
Mount Perry	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	..	..	..	..	185	868
Nanango	1	*	*	1	4	3	7	1	9	1	80	..	..	40	65	25	..	88	28	..	17	..	7*b*	65,227	1,679
Tiaro	48	10	1	5	*	5	2	4	7	2	..	..	..	..	..	..	..	23	..	..	..	..	..	4,805	2,037
Wienholt	9	*	6	1	68	23	7	3	10	7	..	..	..	156	39	..	..	257	7	..	4	..	..	76,068	2,345
Total Wide Bay	827	158	80	39	73	78	21	75	41	106	80	7	..	271	208	25	..	615	183	3	57	..	7*b*	265,376	21,089
Downs Division.																									
Allora	..	1	..	..	1	..	..	6	..	5	3,268	..	..	..	91	..	..	..	..	10	1,324	..	..	59,751	324
Chinchilla	..	..	..	..	..	..	..	..	3	2	14	..	..	..	..	..	..	4	55	..	..	..	..	9,573	2,311
Clifton	..	..	..	..	2	..	..	..	..	..	8,657	..	..	..	522	..	..	..	..	79	3,457	98	..	103,013	408
Condamine	..	..	..	..	..	..	..	..	..	5	18	..	..	..	..	..	..	..	..	..	4	..	..	5,429	3,592
Dalby	..	..	2	..	..	1	..	1	..	1	8,722	..	..	..	*	..	..	3	..	..	142	..	..	126,675	6,797
Goondiwindi	..	..	2	..	1	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1,386	4,385
Inglewood	..	..	..	..	..	..	..	..	..	2	100	..	..	..	..	..	..	3	..	..	70	..	..	5,957	1,450
Killarney	3	..	9	..	*	1	..	1	..	2	289	..	..	..	22	..	..	1	..	..	110	12	..	25,150	234

Oakey	..	2	..	..	4	..	..	*	..	5	3,177	..	..	..	727	..	..	15	..	13	1,097	..	40*b*	162,258	1,173
Pittsworth	..	1	..	..	..	..	..	1	..	*	2,725	..	..	..	424	..	..	1	..	15	1,145	..	..	153,724	1,862
Stanthorpe	1,109	114	519	23	4	421	42	1,571	21	94	..	..	..	..	4	..	..	*	..	..	..	..	..	15,330	1,110
Texas	..	..	..	..	..	..	..	1	..	9	..	..	..	..	..	..	..	..	2	..	..	..	..	1,887	530
Toowoomba	2	..	3	*	*	6	3	2	*	15	1,951	..	..	..	99	..	..	6	20	7	816	..	..	63,774	291
Warwick	41	2	18	..	11	18	..	27	1	7	2,209	..	..	..	289	..	80	..	1	..	448	1	..	74,817	1,358
Total Downs	1,155	120	553	23	23	447	45	1,612	25	148	31,130	..	..	..	2,178	..	80	38	78	124	8,613	111	40*b*	808,724	25,825
Maranoa Division.																									
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	5,987
Dirranbandi	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	117	4,715
Mitchell	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1,958	10,387
Roma	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	34,319	6,394
St. George	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	42	3,402
Surat	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4,248
Yeulba	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	106	591
Total Maranoa	..	..	..	..	..	..	..	..	..	22	..	..	..	..	..	..	..	..	..	..	..	..	..	36,546	35,724
South-Western Division.																									
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4,419
Augathella	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5,264
Charleville	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	48	9,023
Cunnamulla	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	7	13,557
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,476
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	3,917
Quilpie	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	14,227
Thargomindah	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3	22,819
Total South-Western	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	103	78,702
Total South Queensland	*2,854*	*413*	*1,397*	*344*	*991*	*1,028*	*91*	*2,976*	*135*	*1,212*	*31,250*	*19*	..	*271*	*2,451*	*25*	*80*	*1,758*	*409*	*129*	*8,763*	*115*	*49*	*1,338,962*	*170,028*
Port Curtis Division.																									
Banana	..	..	12	1	..	..	..	11	..	1	..	..	..	..	30	..	..	1	..	..	..	..	..	3,029	1,875
Gladstone	30	3	5	29	..	16	2	270	7	48	..	..	..	..	1	..	..	5	1	..	..	..	..	4,968	3,457
Monto	..	..	..	..	3	..	..	..	2	5	..	..	..	..	20	..	..	41	46	..	8	..	..	18,688	1,773
Mount Morgan	5	1	4	1	2	8	1	21	9	12	..	..	..	..	87	..	..	16	65	..	16	..	..	52,090	3,246
Rockhampton	66	..	14	6	1	48	18	73	4	54	..	..	..	..	11	..	..	15	42	..	..	..	..	7,331	13,752
St. Lawrence	..	..	..	..	..	1	..	2	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	350	7,129
Taroom	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	213	5,448
Total Port Curtis	101	4	35	37	6	73	21	377	22	123	..	..	..	..	149	..	..	78	154	..	24	..	..	86,669	36,680
Central-Western Division.																									
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	7,983
Aramac	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	6,757
Barcaldine	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	3,862
Blackall	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	24	8,297
Clermont	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	9	15,011
Emerald	..	..	..	..	..	..	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	79	4,731
Longreach	..	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	21	10,938
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,390
Springsure	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	65	10,230
Tambo	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	12	5,553
Total Central-Western	..	..	..	..	..	..	..	..	..	37	..	..	..	..	..	..	..	..	..	..	..	..	..	221	84,752
Far Western Division.																									
Boulia	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	3	21,027
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22,684
Isisford	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	7,929
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	10,977
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,832
Winton	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	1	23,114
Total Far Western	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	7	103,563
Total Central Queensland	*101*	*4*	*35*	*37*	*6*	*73*	*21*	*377*	*22*	*163*	..	..	..	..	*149*	..	..	*78*	*154*	..	*24*	..	..	*86,897*	*224,995*

* Less than ½ acre.

a Ginger.

Table No. 30—*continued.*

VEGETABLE AND MISCELLANEOUS CROPS, AREAS ; AREA UNDER CROP, &c., 1938. (For Production see Table 33.)

Division.	Vegetables.										Miscellaneous Crops.													Total Areas, &c.	
	Beans.					Peas.													Millet.						
	Green.	Dried.	Cabbages and Cauliflowers.	Cucumbers.	Onions.	Green.	Dried.	Tomatoes.	Turnips.	Market Gardens.	Canary Seed for Grain.	Coffee.	Coconuts.	Cow Peas for Grain.	Grass for Seed.	Linseed.	Lucerne for Seed.	Mangel Wurzel.	Broom.	Seed.	Panicum for Seed.	Sunflower Seed.	Other.	Total Extent of Land under Crop.	Total Area of Petty Sessions Districts.
	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Mls.
Edgecumbe Division.																									
Ayr	2	1	1	*	..	*	..	27	..	3	..	..	..	..	..	..	..	1	..	..	..	..	..	39,186	2,103
Bowen	4	..	3	76	..	1	..	1,423	1	37	..	..	..	..	..	..	..	1	..	..	..	..	..	3,206	1,900
Charters Towers	1	*	7	2	..	*	..	5	1	11	..	..	..	..	..	..	..	..	..	..	..	..	..	244	18,308
Collinsville	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	18	6,310
Mackay	2	*	6	1	4	3	..	12	1	5	..	..	..	..	..	..	..	*	..	..	..	..	..	98,074	8,003
Proserpine	..	..	*	1	..	..	..	13	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	12,910	829
Ravenswood	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	12	848
Townsville	2	2	7	16	..	1	..	59	2	7	..	..	..	..	..	..	..	..	2	..	..	..	..	925	2,619
Total Edgecumbe	11	3	24	96	4	5	..	1,539	5	69	..	..	..	..	..	..	..	2	2	..	..	..	..	154,575	40,920
Rockingham Division.																									
Atherton	2	3	2	*	..	..	..	1	..	42	..	..	..	19	..	..	..	..	..	..	..	..	..	25,995	682
Cairns	2	5	6	*	*	1	..	7	..	8	..	..	..	..	64	..	..	..	..	..	..	..	8*c*	36,883	842
Cardwell	7	5	1	2	..	1	1	21	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1*c*	12,766	1,057
Chillagoe	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	9	8,667
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,021	787
Herberton	1	..	7	1	..	1	..	2	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	616	5,345
Ingham	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	30,947	3,277
Innisfail	*	..	1	..	..	..	..	1	..	17	..	..	..	..	..	..	..	..	..	..	..	..	..	33,926	572
Mareeba	4	*	12	*	..	1	..	19	1	9	..	..	..	217	..	..	..	..	..	..	..	..	..	3,516	2,842
Total Rockingham	16	13	29	3	..	4	1	51	4	83	..	..	..	236	64	..	..	..	..	..	..	..	9*c*	153,679	24,071
Peninsula Division.																									
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25,396
Cook	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	244	23,921
Somerset	1	..	..	..	..	..	..	..	..	3	..	..	360	..	..	..	..	..	..	..	..	..	..	375	4,586
Total Peninsula	1	..	..	..	..	..	..	1	..	5	..	..	360	..	..	..	..	..	..	..	..	..	..	619	53,903
North-Western Division.																									
Burke	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	11	18,228
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,246
Cloncurry	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	14	36,975
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	6,812
Etheridge	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	6	19,640
Hughenden	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	19	9,944
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14,583
Mount Isa	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1,395
Norman	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	4	24,638
Richmond	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	14,122
Total North-Western	..	..	..	..	..	..	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..	..	57	156,583
Total North Queensland	*28*	*16*	*53*	*99*	*4*	*9*	*1*	*1,591*	*9*	*171*	..	..	*360*	*236*	*64*	..	..	*2*	*2*	..	..	..	*9c*	*308,930*	*275,477*
Grand Total, State—																									
1938	2,983	433	1,485	480	1,001	1,110	113	4,944	166	1,546	31,250	19	360	507	2,664	25	80	1,838	565	129	8,787	115	58	1,734,789	670,500
1937	2,939	381	1,683	525	1,515	1,088	118	5,275	176	1,065	17,262	15	360	1,607	2,671	..	154	1,601	759	172	10,052	10	3	1,618,738	670,500
Increase, 1938	44	52	..	..	..	22	..	..	..	481	13,988	4	..	..	..	25	..	237	..	..	..	105	55	116,051	..
Decrease, 1938	..	..	198	45	514	..	5	331	10	..	..	..	..	1,100	7	..	74	..	194	43	1,265	..	..	..	..

* Less than ½ acre. *a* Ginger. *b* Flax fibre. *c* Cassava for tubers.

Table No. 31.

GRAIN AND OTHER CROPS—PRODUCTION, 1938.

(For Areas see Table No. 28.)

Division.	Grain Crops.							Hay (All Kinds).					Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugar-cane (Crushed).	Arrow-root (Tubers).	Peanuts.	Tobacco (Cured Leaf).	Grapes.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	English.	Sweet.							
			Malting.	Other.																	
Moreton Division.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Lb.	Lb.	Lb.
Brisbane (North)	..	..	..	..	2,022	..	..	12	74	190	62	338	175	230	593	249	..	2	3,594	..	472,110
Brisbane (South)	..	..	..	..	526	..	..	..	5	93	30	128	12	6	143	45	..	30	700	..	8,960
Beaudesert	1,079	20	..	..	109,499	..	..	19	72	6,164	106	6,361	362	409	4,135	79	..	65	..	..	700
Caboolture	..	..	..	..	1,616	..	..	..	..	76	31	107	51	197	53	604	14	6	..	..	350
Cleveland	..	..	..	..	30	..	..	..	..	..	..	..	7	54	22	526	..	1	19,606	..	5,053
Crow's Nest	8,286	527	1,318	1,008	99,825	..	..	25	43	2,094	29	2,191	288	29	1,642	..	..	..	..	..	1,988
Dugandan	2,418	60	270	12	186,227	24	..	242	119	9,291	621	10,273	2,526	257	4,289	36,928	..	..	16	..	130
Esk	60	..	..	..	20,452	..	..	15	54	720	69	858	84	211	725	19,666	..	3	..	..	2,872
Gatton	690	..	..	..	76,897	..	..	1,098	1,361	5,423	141	8,023	2,249	856	4,093	146,808	..	..	..	..	4,300
Harrisville	..	18	..	..	84,518	..	..	440	385	5,555	1,180	7,560	236	363	1,776	18,046	..	4	..	..	260
Ipswich	..	..	..	..	10,832	..	..	12	70	1,079	76	1,237	165	89	292	33,095	..	..	200	..	..
Kilcoy	..	..	..	..	18,598	..	..	..	3	308	6	317	101	406	654	..	..	162	..	..	200
Laidley	952	85	..	400	115,008	..	..	292	453	8,263	125	9,133	1,409	799	2,475	46,551	..	..	..	..	2,060
Logan	..	..	..	..	10,231	..	..	..	19	556	23	598	858	778	165	230	18,077	2,271	13,397	..	4,032
Lowood	..	1,224	..	..	59,468	..	..	43	703	2,237	112	3,095	1,647	810	2,593	49,623	..	7	..	..	217,120
Marburg	..	4	..	..	32,650	..	..	..	49	1,041	197	1,287	133	345	423	15,950	..	12	1,175	..	..
Maroochy	..	..	..	..	8,080	..	..	..	..	14	1	15	80	330	56	26	107,993	300	50,109	..	300
Redcliffe	..	..	..	..	5,493	..	..	..	9	369	30	408	188	565	572	..	348	..	..	..	1,350
Rosewood	..	..	..	..	47,380	..	..	..	99	3,235	325	3,659	245	119	1,145	16,886	..	63	..	..	..
Southport	..	..	..	..	17,048	..	..	..	4	76	4	84	400	317	138	..	557	3,280	..	..	1,840
Toogoolawah	..	9	..	..	68,587	..	..	15	..	4,043	27	4,085	351	1,484	3,643	44,094	..	..	..	1,170	27,020
Woodford	..	..	..	..	19,194	..	..	..	..	18	5	23	115	205	290	..	..	176	13,440	..	140
Wynnum	..	..	..	..	100	..	..	..	..	..	1	1	37	114	19	3,413	..	..	300	..	31,860
Oakey-Cooyar	3,092	380	705	330	25,847	..	..	..	5	698	..	703	173	12	786	1,683	..	..	..	..	160
Toowoomba-Helidon	60	..	..	..	15,242	..	..	18	59	1,380	78	1,535	566	875	1,116	18,031	..	..	..	..	16,030
Total Moreton	16,637	2,327	2,293	1,750	1,035,370	24	..	2,231	3,586	52,923	3,279	62,019	12,467	9,860	31,838	452,533	126,989	6,382	102,537	1,170	798,835
Wide Bay Division.																					
Biggenden	..	..	..	..	9,236	..	..	..	42	426	33	501	99	36	551	161,543	1,125	55	6,200	..	..
Bundaberg	..	..	..	..	10,493	..	..	..	5	390	2	397	145	223	130	18,842	508,231	29	2,919	8,412	4,338
Childers	..	..	..	..	1,673	..	..	..	..	20	..	20	4	..	11	51,761	215,455	..	..	..	1,000
Eidsvold	..	..	..	..	3,245	..	..	..	5	92	20	117	37	263	742	370,290	..	..	..	..	160
Gayndah	20	..	..	250	35,197	..	..	20	23	1,054	301	1,398	147	611	3,402	1,476,784	..	..	27,473	640	70
Gin Gin	..	..	..	..	6,631	..	..	..	23	242	4	269	52	24	90	40,663	70,920	..	1,190	..	1,788
Gympie	..	..	..	..	69,398	..	..	..	53	1,195	30	1,278	536	3,898	775	5,419	6,092	166	4,208	..	10,410
Kilkivan	..	..	..	..	5,423	..	..	..	116	239	14	369	25	115	253	9,263	..	..	..	..	12
Maryborough	40	..	..	..	1,897	..	..	45	52	788	94	979	185	51	60	15,508	74,168	..	13,080	30	10,536
Mount Perry	..	..	..	..	240	..	..	..	..	94	4	98	4	15	1	30,299	..	..	..	..	100
Nanango	12,414	8,727	791	1,373	340,025	29	..	..	210	4,146	90	4,446	444	733	3,399	410,163	..	2	7,426,783	..	5,620
Tiaro	..	..	..	..	10,876	..	..	3	23	494	16	536	208	154	349	3,696	33,060	17	1,000	..	10,570
Weinholt	7,347	7,108	732	36	305,014	60	..	67	99	6,924	113	7,203	1,736	1,232	7,131	1,128,472	..	37	7,449,663	..	3,208
Total Wide Bay	19,821	15,835	1,523	1,659	799,348	89	..	135	651	16,104	721	17,611	3,622	7,355	16,894	3,722,703	909,051	306	14,932,516	9,082	47,812
Downs Division.																					
Allora	822,978	8,050	7,613	13,028	107,171	..	..	191	38	1,591	109	1,929	8	..	58	..	..	..	..	..	220
Chinchilla	30,741	1,076	300	20	3,571	..	..	258	122	126	40	546	11	4	54	63,429	..	..	..	..	44,290
Clifton	953,490	2,696	84,832	14,575	208,908	..	..	222	29	1,306	218	1,775	2	..	63	2,984	..	..	..	..	1,490
Condamine	58,476	30	..	120	511	..	..	89	26	117	..	232	2	..	5	137,304	..	..	..	..	4,000
Dalby	1,790,491	7,151	8,429	2,676	8,177	..	..	174	79	377	..	630	..	4	304	110,592	..	..	..	..	8,625
Goondiwindi	5,343	900	..	..	24	..	..	170	12	128	..	310	..	..	9	..	..	..	..	13,440	100
Inglewood	27,605	1,037	36	290	284	130	..	45	55	279	16	395	..	..	2	1,376	..	..	..	340,354	3,704
Killarney	161,246	4,630	993	593	141,761	..	..	104	8	2,334	..	2,446	78	..	10	..	..	..	..	..	550
Oakey	1,453,431	13,159	12,246	9,220	78,909	285	..	562	318	2,711	217	3,808	232	8	1,270	3,793	..	..	..	..	7,116
Pittsworth	1,777,817	9,445	35,737	7,239	37,971	..	..	507	71	1,242	385	2,205	4	..	169	38,169	..	..	..	..	1,476
Stanthorpe	..	..	..	..	3,270	..	..	24	89	172	18	303	326	1	96	..	..	..	..	2,000	4,019,049
Texas	2,871	..	..	..	473	..	..	11	39	453	20	523	..	..	9	5,769	..	..	..	297,682	750
Toowoomba	328,639	7,572	17,867	4,772	100,152	63	..	369	294	2,469	67	3,199	142	1	256	..	..	..	1,480	..	15,877
Warwick	641,484	19,205	11,756	5,539	161,868	..	..	571	214	3,816	73	4,674	106	..	256	1,207	..	..	..	..	51,864
Total Downs	8,054,612	74,951	179,809	58,072	853,050	478	..	3,297	1,394	17,121	1,163	22,975	911	18	2,561	364,623	..	..	1,480	653,476	4,159,111

Table No. 31—*continued.*

Grain and Other Crops—Production, 1938. (For Areas see Table No. 28.)

Division.	Grain Crops.							Hay (All Kinds).					Potatoes.								
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	English.	Sweet.	Pumpkins.	Cotton (Seed Cotton).	Sugarcane (Crushed).	Arrowroot (Tubers).	Peanuts.	Tobacco (Cured Leaf).	Grapes.
			Malting.	Other.																	
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Lb.	Lb.	Lb.
Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	500
Dirranbandi	..	..	..	..	..	..	..	..	5	..	..	5	..	..	..	..	..	..	..	..	1,920
Mitchell	1,465	..	..	..	..	..	..	100	..	..	..	100	..	..	..	..	..	..	..	..	2,988
Roma	389,023	..	..	..	239	..	..	1,379	..	..	10	1,389	..	..	9	8,911	..	..	..	..	696,030
St. George	..	..	..	..	..	..	..	25	..	..	..	25	..	..	4	..	..	..	..	..	3,000
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	600
Yuleba	300	..	..	..	..	..	..	3	3	2	..	8	..	..	..	..	..	..	..	..	15,420
Total Maranoa	390,788	..	..	..	239	..	..	1,507	8	2	10	1,527	..	..	13	8,911	..	..	..	..	720,458
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	120
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	300
Charleville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2,936
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	40	..	..	..	40	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South-Western	..	..	..	..	..	..	..	40	..	..	..	40	..	..	2	..	..	..	..	..	3,376
Total South Queensland	*8,481,858*	*93,113*	*183,625*	*61,481*	*2,688,007*	*591*	..	*7,210*	*5,639*	*86,150*	*5,173*	*104,172*	*17,000*	[illegible]	*51,308*	*1,548,770*	*1,036,040*	*6,688*	*15,036,553*	*663,728*	*5,729,592*
Port Curtis Division.																					
Banana	28,146	..	..	..	210	..	..	27	30	36	40	133	4	20	69	434,410	..	..	..	..	1,600
Gladstone	15	..	..	..	7,428	..	..	1	8	603	187	799	555	62	378	40,935	..	..	17,895	143,646	1,190
Monto	2,700	..	..	..	30,101	..	..	..	22	2,141	37	2,200	184	17	2,847	1,150,313	..	3	14,600	..	1,300
Mount Morgan	68,434	15	..	523	6,681	..	..	341	106	86	63	596	148	6	392	7,290,628	..	..	13,349	..	3,194
Rockhampton	292	..	..	..	6,364	..	..	30	227	686	292	1,235	220	92	340	144,169	..	..	946,543	..	113,406
St. Lawrence	..	..	..	..	301	..	..	..	..	171	..	171	3	1	41	2,718	1,606	..	..	..	..
Taroom	2,142	..	..	..	..	..	..	5	..	..	8	13	..	..	2	10,653	..	..	..	..	..
Total Port Curtis	101,729	15	..	523	51,085	..	..	404	393	3,723	627	5,147	1,114	198	4,069	9,073,826	1,606	3	992,387	143,646	120,690
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60
Blackall	..	..	..	..	..	..	..	..	..	..	..	..	5	3	..	..	..	..	..	..	192
Clermont	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	800
Emerald	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	738
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	1,650
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	487	..	..	..	..	350
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	6	..	1	..	..	..	..	..	1,500
Total Central-Western	..	..	..	..	..	..	..	..	..	2	..	2	21	3	2	487	..	..	..	..	5,290
Far Western Division.																					
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	400
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	500
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	400
Total Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,300
Total Central Queensland	*101,729*	*15*	..	*523*	*51,085*	..	..	*404*	*393*	*3,725*	*627*	*5,149*	*1,135*	*201*	*4,071*	*9,074,313*	*1,606*	*3*	*992,387*	*143,646*	*127,280*

Edgecumbe Division.																					
Ayr	..	..	..	..	2,881	..	..	..	..	30	..	30	239	11	132	19,783	706,387	..	400	8,336	..
Bowen	..	..	..	..	847	..	..	..	..	..	20	20	135	5	746	15,777	2,514	..	380	34,277	220
Charters Towers	..	..	..	..	116	..	..	..	..	3	..	3	16	8	42	67	..	..	112	..	58,414
Collinsville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	987	..	..	..	..	..
Mackay	..	..	..	..	2,909	..	..	..	..	..	5	5	108	15	74	2,669	1,102,804	..	..	111,980	2,400
Proserpine	..	..	..	..	72	..	..	..	..	..	..	..	35	3	9	..	168,748	..	..	..	..
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..
Townsville	..	..	..	..	168	..	..	..	..	1	12	13	219	1	59	..	4,658	..	..	52,473	24
Total Edgecumbe ..	..	..	..	..	6,993	..	..	..	..	34	37	71	752	43	1,068	39,283	1,985,111	..	892	207,066	61,058
Rockingham Division.																					
Atherton	..	..	..	..	969,063	..	..	20	7	246	61	334	50	582	23	..	..	..	639,977	2,432	200
Cairns	..	..	..	..	136	..	..	..	..	..	10	10	4	2	21	15,365	725,128	..	1,200	..	..
Cardwell	..	..	..	..	440	..	..	..	..	..	..	..	11	22	15	3,806	238,756	..	..	..	..
Chillagoe	..	..	..	..	13	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	98,361	..	5	..	..
Herberton	..	..	..	..	10,861	..	..	13	2	2	..	17	28	9	6	..	..	..	..	2,925	12,030
Ingham	..	..	..	..	2,102	..	..	..	..	..	..	..	116	31	17	149	548,560	..	25	3,400	..
Innisfail	..	..	..	..	580	..	..	..	..	..	..	..	6	1	1	..	708,631	..	..	..	..
Mareeba	149	..	..	..	2,971	..	..	..	8	..	..	8	75	30	68	4,313	..	..	537,262	1,174,043	..
Total Rockingham ..	149	..	..	..	986,166	..	..	33	17	248	71	369	290	678	152	23,633	2,319,436	..	1,178,469	1,182,800	12,230
Peninsula Division.																					
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	1,173	..	..	..	..	..	..	..	..	..	3	1,873	..	..	17,564	..	..
Somerset	..	..	..	..	..	..	..	..	..	..	..	..	..	4	2	..	..	..	..	..	..
Total Peninsula ..	..	..	..	..	1,173	..	..	..	..	..	..	..	..	4	5	1,873	..	..	17,564		..
North-Western Division.																					
Burke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40
Hughenden	..	..	..	..	..	..	..	..	..	..	..	..	6	..	2	..	..	..	..	..	802
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Norman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Total North-Western ..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	2	..	..	..	..	..	862
Total North Queensland ..	*149*	..	..	..	*994,332*	..	..	*33*	*17*	*282*	*108*	*440*	*1,048*	*725*	*1,227*	*64,789*	*4,304,547*	..	*1,196,925*	*1,389,866*	*74,150*
Grand Total, State—																					
1938	8,583,736	93,128	183,625	62,004	3,733,424	591	..	7,647	6,049	90,157	5,908	109,761	19,183	18,159	56,606	13,687,872	5,342,193	6,691	17,225,845	2,197,240	5,931,022
1937	3,749,443	79,323	84,598	36,423	2,628,458	24	..	5,784	4,814	75,751	11,869	98,218	16,565	10,047	56,089	11,792,828	5,132,886	7,494	11,300,294	2,317,066	5,322,885
Increase, 1938	4,834,293	13,805	99,027	25,581	1,104,966	567	..	1,863	1,235	14,406	..	11,543	2,618	8,112	517	1,895,044	209,307	..	5,925,551	..	608,137
Decrease, 1938 ..	..	..	..	..	..	..	..	..	..	..	5,961	..	..	..	..	..	..	803	..	119,826	..

Table No. 32.

FRUIT CROPS—PRODUCTION, 1938. (For Areas see Table No. 29.)

Division.	Apples.	Apricots.	Bananas.	Cherries.	Custard Apples.	Figs.	Goose-berries (Cape).	Lemons.	Mangoes.	Nec-tarines.	Oranges and Man-darins.	Papaws.	Passion Fruit.	Peaches.	Pears.	Per-simmons.	Pine-apples.	Plums.	Quinces.	Straw-berries.	Water-melons and Rock-Melons.
Moreton Division.	Bushels.	Bushels.	Bunches.	Bushels.	Bushels.	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Quarts.	Dozens.
Brisbane (North)	..	..	47,277	..	439	..	..	54	623	..	160	86,988	788	1,857	..	..	70,559	76	..	24,169	7,927
Brisbane (South)	..	..	250	..	2,365	7,118	2,150	4	118	..	96	61,826	11	..	..	..	25,734	..	..	4,189	245
Beaudesert	6	1	1,595	..	..	..	..	158	48	..	3,319	30	..	36	7	1	..	3	..	..	85
Caboolture	..	..	90,260	..	14	..	5,600	323	158	..	9,464	477	995	3	..	..	171,322	2	..	4,525	89
Cleveland	..	..	26,498	..	20,126	113	..	1,233	262	..	329	22,941	3,476	..	..	13	51,598	..	..	284,538	1,250
Crow's Nest	4	18	..	..	..	..	..	2,568	..	..	2,219	..	2	11	7	..	..	17	..	..	15
Dugandan	20	..	..	..	3	..	..	38	7	..	335	19	44	19	..	..	70	2	..	..	189
Esk	1	..	3,000	..	..	..	..	1,119	27	..	5,104	30	720	2	..	4	2	..	2	..	6
Gatton	..	1	..	..	..	40	..	90	..	..	18,588	..	..	1	..	..	934	..	..	..	4,002
Harrisville	..	..	..	..	..	..	..	1	22	..	105	..	..	32	..	..	16	..	..	..	10
Ipswich	..	..	..	..	16	..	..	..	547	..	521	60	40	1	..	..	11,996	..	..	128	128
Kilcoy	..	..	6,637	..	..	..	..	10	..	..	100	60	..	..	..	..	30	..	..	..	30
Laidley	1	1	300	..	..	2	..	11	7	..	295	240	..	12	2	..	373	1	..	..	43
Logan	..	..	192,572	..	18,776	2	..	979	2,829	..	1,647	555	4,412	5	17	..	12,346	..	..	600	399
Lowood	..	..	..	..	..	..	..	40	..	..	1,383	..	..	5	..	..	5,340	..	..	..	30
Marburg	..	3	..	..	..	..	14,299	15	104	..	74	30	..	140	..	..	1,474	6	..	..	24
Maroochy	..	..	308,634	..	695	..	..	1,128	230	..	100,780	30,524	1,524	1	5	5	991,220	..	..	197,103	424
Redcliffe	..	..	44,456	..	..	..	..	61	311	..	1,121	1,180	289	10	..	..	35,001	..	..	2,403	3,150
Rosewood	..	1	..	..	..	..	3,360	43	1	..	71	..	..	1	..	..	20	..	..	..	18
Southport	14	..	586,557	..	128	2	..	36	230	..	8,488	981	1,761	19	2	1	1,122	7	..	200	47
Toogoolawah	..	1	..	..	..	..	..	20	..	..	206	..	10	10	1	6	..	..	..	..	31
Woodford	1	..	75,286	..	3	..	..	46	46	..	732	45	17	17	4	..	4,484	2	..	..	12
Wynnum	..	..	6,191	..	122	..	..	3	..	..	..	9,632	1,163	..	..	..	8,464	..	..	16,468	515
Oakey-Cooyar	3	7	..	..	..	..	..	30	..	..	57	..	..	2	2	..	..	3	..	..	26
Toowoomba-Helidon	..	2	..	..	..	..	..	20	..	..	3,940	..	..	2	..	..	..	..	..	..	340
Total Moreton	50	35	1,389,513	..	42,687	7,277	25,409	8,030	5,570	..	159,134	215,618	15,252	2,186	47	30	1,392,105	119	2	534,323	19,035
Wide Bay Division.																					
Biggenden	..	..	600	..	..	..	..	..	..	..	120	..	..	..	..	..	680	..	..	..	153
Bundaberg	..	..	16,786	..	521	..	..	120	885	..	4,818	120	142	20	16	3	14,007	..	..	5,065	769
Childers	..	..	..	..	19	..	..	26	623	..	9,610	3	3	9	..	6	6,806	..	..	..	50
Eidsvold	..	..	..	..	..	..	..	264	..	..	383	..	..	..	1	..	..	3	..	..	10,000
Gayndah	..	..	1,990	..	25	5	..	13,651	882	..	27,107	66	312	37	..	..	863	..	..	..	89
Gin Gin	..	..	130	..	9	..	..	32	1,192	..	844	30	96	6	..	..	272	..	..	..	78
Gympie	8	..	155,388	..	74	..	1,500	199	1,123	..	3,063	13,461	225	29	1	8	235,683	..	..	2,052	679
Kilkivan	..	..	..	..	..	..	..	37	28	..	54	..	2	..	..	..	5	..	..	..	2
Maryborough	..	..	3,710	..	166	..	..	108	1,151	..	55,209	4,350	168	9	12	..	50,586	9	..	30	1,530
Mount Perry	..	..	200	..	27	..	..	20	76	..	322	..	5	..	..	..	15	..	..	..	34
Nanango	5	37	..	..	..	..	..	127	..	..	229	..	1	80	4	..	907	36	..	..	38
Tiaro	..	..	3,320	..	119	..	..	130	972	..	821	10,215	237	37	5	..	11,475	1	..	..	194
Wienholt	17	42	12	..	5	..	..	159	3	..	541	..	5	64	21	..	298	14	..	5	108
Total Wide Bay	30	79	182,136	..	965	5	1,500	14,873	6,935	..	103,121	28,245	1,196	291	60	17	321,597	63	..	7,152	13,724
Downs Division.																					
Allora	..	24	..	..	..	..	..	22	..	..	1,544	..	..	13	..	..	..	5	..	..	36
Chinchilla	..	21	..	..	..	1	..	14	..	..	74	..	..	38	..	..	..	11	..	..	40
Clifton	6	58	..	..	..	5	..	8	..	..	85	..	..	30	21	..	..	16	..	..	..
Condamine	5	6	..	..	..	..	..	18	..	..	185	..	..	70	..	..	..	3	..	..	30
Dalby	..	20	..	..	..	5	..	112	..	..	425	..	..	17	7	..	..	2	..	..	20
Goondiwindi	..	..	..	..	..	..	..	..	..	..	50	..	..	..	..	..	..	..	..	..	90
Inglewood	..	20	..	..	..	..	..	30	..	..	20	..	..	55	4	..	..	20	..	32	52
Killarney	7	49	..	..	..	..	..	5	..	2	39	..	2	28	8	..	..	17	1	..	20
Oakey	23	80	..	..	..	..	..	83	..	..	220	..	..	86	..	..	..	30	..	..	3
Pittsworth	..	14	..	..	..	..	..	12	..	..	..	..	..	16	1	..	..	3	..	..	2
Stanthorpe	271,396	8,317	..	301	..	11	..	..	..	3,845	..	..	86	78,542	26,310	..	..	58,863	739	..	691
Texas	..	5	..	..	..	..	..	1	..	..	5	..	..	7	1	7	..	2	..	..	20
Toowoomba	29	227	..	..	..	..	..	200	3	..	1,612	..	..	148	52	..	..	73	3	..	..
Warwick	10,568	1,458	..	..	..	6	..	4	..	52	77	..	..	439	959	..	..	1,168	36	..	16
Total Downs	282,034	10,299	..	301	..	28	..	509	3	3,899	4,336	..	88	79,489	27,363	7	..	60,213	779	32	1,020

Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	29	..	..	69	..	..	..	..	..	..	..	..	..	..
Dirranbandi	..	2	..	..	..	..	..	..	..	..	6	..	..	2	..	..	..	..	..	..	36
Mitchell	..	2	..	..	..	..	..	4	..	..	57	..	..	3	..	..	..	..	..	..	..
Roma	..	21	..	..	..	..	..	35	..	..	2,687	..	..	45	24	..	..	..	..	..	297
St. George	..	..	..	..	..	..	..	13	..	..	72	..	..	22	10	..	..	..	..	..	93
Surat	..	1	..	..	..	..	..	1	..	..	2	..	..	3	..	..	..	..	..	..	10
Yeulba	..	..	..	..	..	..	..	..	..	..	80	..	..	..	..	..	..	..	..	..	2
Total Maranoa	..	26	..	..	..	..	..	82	..	..	2,973	..	..	75	34	..	..	..	..	..	438
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Augathella	..	1	..	..	..	..	..	3	..	..	21	..	..	1	..	..	..	..	..	..	..
Charleville	..	6	..	..	..	..	..	76	..	..	1,299	..	..	25	..	..	..	..	..	..	42
Cunnamulla	..	1	..	..	..	..	..	2	..	..	160	..	..	..	..	..	..	..	..	..	20
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South-Western	..	8	..	..	..	..	..	81	..	..	1,480	..	..	26	..	..	..	..	..	..	92
Total South Queensland	*282,114*	*10,447*	*1,571,649*	*301*	*43,652*	*7,310*	*26,909*	*23,575*	*12,508*	*3,899*	*271,044*	*243,863*	*16,536*	*82,067*	*27,504*	*54*	*1,713,702*	*60,395*	*781*	*541,507*	*34,309*
Port Curtis Division.																					
Banana	..	1	..	..	..	..	..	39	..	..	200	..	..	6	..	..	..	..	..	..	100
Gladstone	..	..	12,907	..	120	..	..	222	1,155	..	2,047	25,200	206	33	20	..	3,251	..	..	..	716
Monto	..	..	..	..	..	..	..	8	..	..	152	..	..	2	..	..	..	..	..	..	134
Mount Morgan	..	..	2	..	38	1	..	121	372	..	2,901	137	..	59	..	..	1,090	..	..	..	186
Rockhampton	..	..	64,352	..	299	..	..	498	3,032	..	20,989	9,058	654	57	..	..	48,100	..	..	6,266	1,427
St. Lawrence	..	..	926	..	7	..	..	45	759	..	205	..	40	..	..	..	4,643	..	..	..	12
Taroom	..	..	..	..	..	..	..	3	..	..	40	..	..	2	..	..	..	1	..	..	20
Total Port Curtis	..	1	78,187	..	464	1	..	936	5,318	..	26,534	34,395	900	159	20	..	57,084	1	..	6,266	2,595
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	..	..	..	60	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
Blackall	..	..	..	..	..	..	..	8	30	..	56	..	..	1	..	..	..	..	..	..	130
Clermont	..	2	..	..	..	..	..	12	..	..	51	..	..	..	..	..	..	2	..	..	52
Emerald	..	..	5	..	3	..	..	216	7	..	5,106	7	..	..	..	..	..	..	..	..	26
Longreach	..	..	..	..	..	..	..	20	12	..	..	..	..	10	..	..	..	..	..	..	108
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	1	..	..	3	1	..	24	..	..	2	..	..	..	..	..	..	2
Tambo	..	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	20
Total Central-Western	..	2	5	..	4	..	..	259	50	..	5,312	7	..	13	..	..	..	2	..	..	348
Far Western Division.																					
Boulia	..	..	..	..	..	..	..	35	..	..	25	..	..	..	..	..	..	..	..	..	12
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Jundah	..	..	..	..	..	..	..	16	..	..	75	..	..	..	..	..	..	..	..	..	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..
Total Far Western	..	..	..	..	..	..	..	51	1	..	102	..	..	..	..	..	..	..	..	..	18
Total Central Queensland	..	*3*	*78,192*	..	*468*	*1*	..	*1,246*	*5,369*	..	*31,948*	*34,402*	*900*	*172*	*20*	..	*57,084*	*3*	..	*6,266*	*2,961*

Table No. 32—*continued.*

FRUIT CROPS—PRODUCTION, 1938. (For Areas see Table No. 29.)

Division.	Apples.	Apricots.	Bananas.	Cherries.	Custard Apples.	Figs.	Gooseberries (Cape).	Lemons.	Mangoes.	Nectarines.	Oranges and Mandarins.	Papaws.	Passion Fruit.	Peaches.	Pears.	Persimmons.	Pineapples.	Plums.	Quinces.	Strawberries.	Watermelons and Rock-Melons.
	Bushels.	Bushels.	Bunches.	Bushels.	Bushels.	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Quarts.	Dozens.
Edgecumbe Division.																					
Ayr	..	..	13,150	..	23	..	..	106	653	..	258	21	3	..	..	..	1,134	..	..	..	180
Bowen	..	..	1,449	..	150	..	..	113	12,664	..	791	70	5	..	..	..	29,862	..	..	150	1,238
Charters Towers	..	..	20	..	1	..	..	331	17	..	6,252	3	..	12	..	..	..	..	..	10	655
Collinsville	..	..	..	..	..	..	..	16	..	..	19	..	..	..	..	..	..	..	..	..	86
Mackay	..	..	49,894	..	456	..	..	1,727	17,940	..	10,774	2,505	4	38	1	..	4,735	..	..	..	538
Proserpine	..	..	310	..	37	..	..	285	1,734	..	1,300	..	..	2	..	..	92	..	..	..	30
Ravenswood	..	..	..	..	1	..	..	7	100	..	555	..	..	..	..	..	..	..	..	..	15
Townsville	..	..	5,908	..	60	..	..	294	1,299	..	2,730	3,494	4	..	..	..	24,695	..	..	300	622
Total Edgecumbe	..	..	70,731	..	728	..	..	2,879	34,407	..	22,679	6,093	16	52	1	..	60,518			460	3,364
Rockingham Division.																					
Atherton	8	..	1,447	..	53	..	..	216	97	..	1,155	57	..	27	3	..	424	5	..	..	..
Cairns	..	..	19,154	..	51	..	..	499	2,956	..	4,413	2,928	2	6	..	..	11,738	..	..	..	937
Cardwell	..	..	8,277	..	..	..	..	198	82	..	15,343	18	1	..	..	..	131	1	..	..	83
Chillagoe	..	..	..	..	..	..	..	8	126	..	28	..	..	..	..	..	..	..	..	..	..
Douglas	..	..	12	..	1	..	..	60	806	..	174	..	..	..	..	..	30	..	..	..	..
Herberton	36	7	20	..	2	..	..	81	15	..	563	..	..	23	68	25	..	217	..	..	1
Ingham	..	..	506	..	54	..	..	1,281	4,186	..	3,926	78	2	22	..	..	2,085	1	..	..	2
Innisfail	..	..	6,815	..	4	..	..	248	93	..	1,057	138	50	..	..	..	1,381	..	..	..	45
Mareeba	..	..	1,785	..	23	..	..	104	1,099	..	510	116	150	1	..	..	546	..	..	..	933
Total Rockingham	44	7	38,016	..	188	..	..	2,695	9,460	..	27,169	3,335	205	79	71	25	16,335	224	..	..	2,001
Peninsula Division.																					
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	60	..	1	..	..	..	150	..	631	39	..	..	..	..	14	..	..	..	..
Somerset	..	..	70	..	..	..	..	..	..	..	..	48	..	..	..	..	..	..	..	..	..
Total Peninsula	..	..	130	..	1	..	..	..	150	..	631	87	..	..	..	..	14	..	..	..	..
North-Western Division.																					
Burke	..	..	80	..	1	..	..	3	..	..	3	31	..	..	..	..	..	..	..	..	13
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	20	..	..	10	..	..	..	..	..	..	..	..	..	34
Croydon	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	4	..	14	..	..	..	..	..	..	..	..	..	..
Hughenden	..	..	..	..	..	..	..	40	..	..	425	..	..	..	..	..	..	..	..	..	123
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	100	..	..	..	..	..	114	..	123	30	..	..	..	..	20	..	..	..	24
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	180	..	1	..	..	63	118	..	581	61	..	..	..	..	20	..	..	..	194
Total North Queensland	*44*	*7*	*109,057*	..	*918*	..	..	*5,637*	*44,135*	..	*51,060*	*9,576*	*221*	*131*	*72*	*25*	*76,887*	*224*	..	*460*	*5,559*
Grand Total, State—																					
1938	282,158	10,457	1,758,898	301	45,038	7,311	26,909	30,458	62,012	3,899	354,052	287,841	17,657	82,370	27,596	79	1,847,673	60,622	781	548,233	42,829
1937	269,410	13,912	1,517,451	255	29,860	3,164	5,375	30,466	72,092	3,600	293,113	177,573	18,764	90,113	26,179	126	1,331,091	76,017	941	310,835	38,715
Increase, 1938	12,748	..	241,447	46	15,178	4,147	21,534	..	..	299	60,939	110,268	..	..	1,417	..	516,582	..	..	237,398	4,114
Decrease, 1938	..	3,455	..	..	..	..	..	8	10,080	..	..	..	1,107	7,743	..	47	..	15,395	160	..	..

Table No. 33.

VEGETABLE AND MISCELLANEOUS CROPS—PRODUCTION, 1938. (For Areas see Table No. 30.)

Division.	Vegetables.									Miscellaneous Crops.											
	Beans.		Cabbages and Cauliflowers.	Cucumbers.	Onions.	Peas.		Tomatoes.	Turnips.	Canary Seed.	Coffee.	Copra.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed).	Panicum Seed.	Sunflower Seed.
	Green.	Dried.				Green.	Dried.														
Moreton Division.	Bags.	Bushels.	Dozen.	Dozen.	Cwt.	Bags.	Bushels.	Bushels.	Tons.	Cwt.	Lb.	Tons.	Bushels.	Cwt.	Lb.	Cwt.	Tons.	Lb. Straw.	Cwt.	Cwt.	Cwt.
Brisbane (North)	10,061	797	43,673	16,245	..	7,699	346	19,781	14	..	..	..	..	1	..	..	18	..	..	20	..
Brisbane (South	5,806	30	19,291	14,030	..	1,902	20	7,073	8	..	..	..	..	..	..	..	..	..	..	..	..
Beaudesert	113	66	226	135	83	15	100	357	9	40	..	..	..	1	..	..	1,005	..	..	4	..
Caboolture	416	..	138	1,526	..	121	..	353	7	..	..	..	..	..	..	..	10	..	..	15	..
Cleveland	16,845	4,681	74,920	69,905	..	752	226	91,304	..	..	..	..	..	..	..	..	20	..	..	..	..
Crow's Nest	..	..	..	..	..	..	..	..	..	..	..	..	..	200	..	..	115	..	..	..	..
Dugandan	3,000	..	3,090	9,272	121	1,333	78	3,903	60	20	..	..	..	..	..	..	1,035	3,920	..	201	..
Esk	..	..	68	..	..	24	..	..	7	..	..	..	..	..	..	..	111	..	..	..	..
Gatton	140	40	17,078	140	24,561	154	..	510	42	15	..	..	..	15	..	..	381	..	..	..	..
Harrisville	304	12	129	366	37	586	..	915	9	..	..	..	..	..	..	..	343	..	..	38	..
Ipswich	976	20	4,640	2,016	5	797	60	285	2	..	..	..	..	..	..	..	43	..	..	..	..
Kilcoy	42	..	..	..	..	..	..	55	..	..	..	..	..	40	..	..	242	..	..	..	..
Laidley	196	..	622	22	12,102	252	..	367	11	27	..	..	..	152	..	..	348	63,338	17	20	24
Logan	11,411	648	36,570	6,875	..	6,449	..	32,534	4	..	..	..	..	17	..	..	8	..	..	3	..
Lowood	355	..	140	700	10,267	362	18	379	11	..	..	..	..	30	..	..	526	1,330	..	102	..
Marburg	585	106	281	54	60	1,877	807	1,317	1	..	..	..	..	60	..	..	293	..	..	36	..
Maroochy	16,048	2,437	654	6,831	..	964	20	1,513	20	..	8,580	..	..	3	..	..	27	..	..	..	..
Redcliffe	1,659	329	12,050	3,812	..	1,174	40	3,952	5	2	..	..	..	..	..	..	6	..	..	9	..
Rosewood	330	..	..	..	52	625	11	768	5	..	..	..	..	..	..	..	318	..	..	13	..
Southport	3,291	286	5,432	2,167	..	882	..	628	4	..	..	..	..	4	..	..	20	..	..	..	..
Toogoolawah	..	32	65	5	71	1	..	10	3	2	..	..	..	..	..	..	1,041	..	..	..	..
Woodford	105	..	..	..	..	..	..	..	11	..	..	..	..	..	..	..	92	..	..	..	..
Wynnum	834	495	754	2,401	..	1,087	312	7,508	2	..	..	..	..	..	..	..	..	..	..	10	..
Oakey-Cooyar	..	..	..	..	..	..	..	..	..	8	..	..	..	10	..	..	73	..	..	5	..
Toowoomba-Helidon	308	..	1,999	530	615	310	76	1,213	33	..	..	..	..	..	..	..	117	..	..	6	..
Total Moreton	72,825	9,979	221,820	137,032	47,974	27,366	2,114	174,725	268	109	8,580	..	..	533	..	..	6,192	68,588	17	482	24
Wide Bay Division.																					
Biggenden	..	..	350	150	..	..	..	34	13	..	..	..	..	6	..	..	97	..	..	30	..
Bundaberg	328	6	3,968	1,180	..	614	157	1,740	..	..	..	..	..	..	..	..	12	..	..	..	..
Childers	..	..	202	50	..	120	12	100	2	..	..	..	..	..	..	..	..	..	..	..	..
Eidsvold	56	..	249	..	100	..	..	..	3	..	..	..	..	..	..	..	77	1,680	..	..	..
Gayndah	49	..	215	64	8	55	..	123	5	..	..	..	563	105	..	..	748	27,501	14	34	..
Gin Gin	..	..	166	100	..	..	..	46	..	..	..	..	..	7	..	..	1	2,576	..	..	..
Gympie	66,829	14,691	6,942	11,709	4	1,015	87	986	83	..	1,400	..	..	..	..	..	250	3,360	..	..	..
Kilkivan	212	..	..	..	..	..	20	..	..	..	..	..	..	7	..	..	92	..	..	..	..
Maryborough	240	400	4,204	587	24	391	1	900	1	..	..	..	..	..	..	..	1	..	..	..	..
Mount Perry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..
Nanango	63	20	41	59	203	80	42	44	35	253	..	..	191	279	2,352	..	435	7,040	..	84	..
Tiaro	3,456	400	372	862	2	432	60	149	37	..	..	..	..	..	..	..	102	..	..	..	..
Wienholt	767	6	1,634	540	6,096	946	111	243	33	..	..	..	655	96	..	..	2,317	676	..	8	..
Total Wide Bay	72,000	15,523	18,343	15,301	6,437	3,653	490	4,365	212	253	1,400	..	1,409	500	2,352	..	4,138	42,833	14	156	..
Downs Division.																					
Allora	..	62	..	..	27	..	..	478	..	9,171	..	..	..	365	..	..	..	..	40	9,476	..
Chinchilla	..	..	..	..	..	..	..	..	11	120	..	..	..	..	..	..	4	6,830	..	..	..
Clifton	..	..	..	..	125	..	..	..	..	20,779	..	..	..	2,140	..	..	..	..	610	24,204	435
Condamine	..	..	..	..	..	..	..	..	..	90	..	..	..	..	..	..	..	..	..	..	..
Dalby	..	..	309	..	..	30	..	50	..	18,303	..	..	..	5	..	..	15	..	..	736	..
Goondiwindi	..	..	162	..	..	..	..	130	..	..	..	..	..	..	..	..	..	..	..	..	..
Inglewood	..	..	..	..	..	..	..	..	..	134	..	..	..	..	..	..	1	..	..	480	..
Killarney	240	..	2,259	..	60	60	..	104	..	1,125	..	..	..	100	..	..	2	..	..	487	70
Oakey	..	17	..	..	476	..	..	18	..	10,156	..	..	..	3,128	..	..	113	..	169	7,453	..
Pittsworth	..	..	..	..	..	..	..	6	..	7,085	..	..	..	1,087	..	..	1	..	80	6,694	..
Stanthorpe	81,537	7,307	47,239	8,071	46	24,057	1,997	123,587	28	..	..	..	..	40	..	..	1	..	..	..	..
Texas	..	..	..	..	..	..	..	138	..	..	..	..	..	..	..	..	..	600	..	..	..
Toowoomba	427	..	999	16	45	323	..	191	4	3,771	..	..	..	540	..	..	13	4,480	56	4,435	..
Warwick	2,698	26	2,131	..	950	481	..	1,887	2	6,518	..	..	..	3,130	..	94	..	..	..	2,794	40
Total Downs	84,902	7,412	53,099	8,087	1,729	24,951	1,997	126,589	45	77,252	..	..	..	10,535	..	94	150	11,910	955	56,759	545

Table No. 33—*continued.*

VEGETABLE AND MISCELLANEOUS CROPS—PRODUCTION, 1938. (For Areas see Table No. 30.)

Division.	Vegetables.										Miscellaneous Crops.												
	Beans.		Cabbages and Cauliflowers.	Cucumbers.	Onions.	Peas.		Tomatoes.	Turnips.	Canary Seed.	Coffee.	Copra.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed).	Panicum Seed.	Sunflower Seed.
	Green.	Dried.				Green.	Dried.														
	Bags.	Bushels.	Dozen.	Dozen.	Cwt.	Bags.	Bushels.	Bushels.	Tons.	Cwt.	Lb.	Tons.	Bushels.	Cwt.	Lb.	Cwt.	Tons.	Lb. Straw.	Cwt.	Cwt.	Cwt.
Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dirranbandi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mitchell	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Roma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. George	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yuleba	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Maranoa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Charleville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South Queensland	*229,727*	*32,914*	*293,262*	*160,420*	*56,140*	*55,970*	*4,601*	*305,679*	*525*	*77,614*	*9,980*	..	*1,409*	*11,568*	*2,352*	*94*	*10,480*	*123,331*	*986*	*57,397*	*569*
Port Curtis Division.																					
Banana	..	..	3,960	400	..	..	..	1,000	..	..	..	..	..	270	..	..	5	..	..	..	..
Gladstone	3,283	239	551	6,414	..	1,373	138	19,380	17	..	..	..	..	2	..	..	23	700	..	..	..
Monto	..	..	..	..	207	..	..	..	6	..	..	..	..	55	..	..	229	2,220	..	10	..
Mount Morgan	400	30	780	195	44	654	30	2,212	82	..	..	..	..	51	..	..	122	3,544	..	35	..
Rockhampton	2,421	..	3,006	1,246	63	2,390	425	3,898	13	..	..	..	..	425	..	..	52	3,953	..	..	..
St. Lawrence	..	..	..	..	..	51	..	38	..	..	..	..	..	..	..	..	..	..	..	..	..
Taroom	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Port Curtis	6,104	269	8,297	8,255	314	4,468	593	26,528	118	..	..	..	..	803	..	..	431	10,417	..	45	..
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Blackall	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Emerald	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Central-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Far Western Division.																					
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Central Queensland	*6,104*	*269*	*8,297*	*8,255*	*314*	*4,468*	*593*	*26,528*	*118*	..	..	..	..	*803*	..	..	*431*	*10,417*	..	*45*	..
Edgecumbe Division.																					
Ayr	1,012	60	148	70	..	21	..	2,020	..	..	..	..	..	..	..	..	..	..	..	..	..
Bowen	101	..	397	36,942	..	25	..	148,427	3	..	..	..	..	..	..	..	3	..	..	..	..
Charters Towers	166	2	1,211	612	..	57	..	588	6	..	..	..	..	..	..	..	1	..	..	..	..
Collinsville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	146	5	1,229	292	168	126	..	818	3	..	..	..	..	..	..	..	..	..	..	..	..
Proserpine	..	..	20	300	..	..	..	603	..	..	..	..	..	..	..	..	4	..	..	..	..
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Townsville	163	40	846	2,782	..	37	..	3,945	4	..	..	..	..	..	..	..	..	1,040	..	..	..
Total Edgecumbe	1,588	107	3,851	40,998	168	266	..	156,401	16	..	..	..	..	..	..	..	8	1,040	..	..	..
Rockingham Division.																					
Atherton	42	316	746	7	..	..	..	51	..	..	..	..	..	..	..	..	..	..	..	..	..
Cairns	158	371	887	140	3	100	..	390	..	..	..	..	110	..	..	..	..	..	..	..	..
Cardwell	501	316	10	..	..	74	..	1,389	..	..	..	..	..	66	..	..	..	..	..	..	..
Chillagoe	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Herberton	113	..	813	132	..	52	..	72	8	..	..	..	..	..	..	..	..	..	..	..	..
Ingham	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Innisfail	1	..	72	..	..	..	..	32	..	..	..	..	..	..	..	..	..	..	..	..	..
Mareeba	77	18	3,409	168	..	324	..	1,443	3	..	..	..	2,082	..	..	..	..	..	..	..	..
Total Rockingham	892	1,021	5,937	447	3	550	..	3,377	11	..	..	..	2,192	66	..	..	..	..	..	..	..
Peninsula Division.																					
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	..	..	..	35	..	..	..	..	..	..	..	..	..	..	..	..	..
Somerset	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Peninsula	40	..	..	..	..	..	..	35	..	..	..	..	..	..	..	..	..	..	..	..	..
North-Western Division.																					
Burke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North Queensland	*2,520*	*1,128*	*9,788*	*41,445*	*171*	*816*	..	*159,813*	*27*	..	..	..	*2,192*	*66*	..	..	*8*	*1,040*	..	..	..
Grand Total, State—																					
1938	238,351	34,311	311,347	210,120	56,625	61,254	5,194	492,020	670	77,614	9,980	..	3,601	12,437	2,352	94	10,919	134,788	986	57,442	569
1937	198,902	22,212	316,720	175,517	90,222	52,555	3,107	500,486	591	48,954	7,077	4	9,655	10,452	..	362	8,891	164,080	984	60,554	44
Increase, 1938	39,449	12.099	..	34,603	..	8,699	2,087	..	79	28,660	2,903	..	..	1,985	2,352	..	2,028	..	2	..	525
Decrease, 1938	..	..	5,373	..	33,597	..	..	8,466	..	..	..	4	6,054	..	..	268	..	29,292	..	3,112	..

Table No. 34.

LAND UNDER CULTIVATION AND THE AREA UNDER EACH CROP IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Total Extent of Land under Cultivation.	Land in Fallow Lying Idle, &c.	Total Extent of Land under Crop.	Area Under Each Description of Crop.													
				Grain Crops.							Potatoes.		Pumpkins.	Cotton.	Sugar-Cane. b		Arrow-root.
				Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Total Area.	
						Malting.	Other.										
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1929	1,269,242	223,007	1,046,235	204,116	2,003	6,318	3,436	171,614	27	1	8,116	2,066	11,014	15,003	214,880	291,660	601
1930	1,331,513	187,297	1,144,216	272,316	5,132	6,148	2,286	172,176	29	..	10,277	2,015	14,437	22,652	222,044	296,070	761
1931	1,401,932	185,530	1,216,402	248,783	1,364	1,701	522	147,669	7	..	10,374	1,874	13,143	22,452	233,304	309,818	789
1932	1,426,648	181,010	1,245,638	250,049	3,733	3,275	1,515	98,487	18	..	9,743	1,791	9,746	29,095	205,046	291,136	691
1933	1,499,996	186,558	1,313,438	232,053	5,207	5,728	3,037	166,948	47	..	11,936	1,791	13,518	68,203	228,154	311,910	797
1934	1,512,591	215,972	1,296,619	221,729	4,566	6,600	3,004	160,607	75	..	11,666	2,271	12,272	43,397	218,426	303,926	835
1935	1,574,166	239,476	1,334,690	239,631	6,823	4,285	2,095	157,370	161	..	13,620	2,503	13,368	54,947	228,515	314,700	860
1936	*a*	*a*	1,506,423	283,648	7,932	4,319	2,333	181,266	27	..	13,448	2,906	20,605	62,200	245,918	338,686	865
1937	*a*	*a*	1,618,738	372,935	7,709	5,923	2,732	174,243	2	..	10,817	2,774	24,391	52,692	245,131	348,840	774
1938	*a*	*a*	1,734,789	442,017	8,650	10,304	3,685	183,415	65	..	10,389	3,465	22,682	66,470	251,847	347,199	797

Year.	Area Under Each Description of Crop—*continued*.																	
	Tobacco.	Coffee.		Hay (all kinds).	Green Forage (all kinds).	Grape Vines.		Bananas.		Pineapples.		Oranges and Mandarins.		Mangoes.		Straw-berries.	Apples.		All Other Crops.
		Bear-ing.	Total Area.			Bear-ing.	Total Area.	Bearing.	Total Area.	Bear-ing.	Total Area.	Bear-ing.	Total Area.	Bear-ing.	Total Area.		Bear-ing.	Total Area.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1929	159	11	12	49,745	208,624	1,617	1,749	12,874	19,357	3,393	5,144	2,874	3,872	182	204	182	3,475	4,012	24,544
1930	71	12	12	52,228	217,282	1,519	1,687	12,565	18,030	3,983	5,543	2,805	3,773	155	185	173	3,427	4,039	24,019
1931	382	17	21	59,601	309,957	1,514	1,749	10,885	14,764	4,394	5,789	2,965	3,969	146	169	126	3,745	4,536	28,031
1932	3,817	7	9	64,076	392,762	1,586	1,868	7,235	10,589	4,534	5,862	2,824	3,622	132	160	114	3,527	4,741	28,504
1933	4,004	5	7	92,943	311,462	1,586	1,963	6,777	10,926	4,551	5,889	2,696	3,424	178	208	126	3,488	5,199	35,864
1934	2,081	18	23	86,477	338,312	1,517	1,926	7,027	10,323	4,603	5,584	2,836	3,421	176	211	138	3,451	5,373	37,948
1935	3,117	14	18	71,309	379,651	2,025	2,470	7,004	8,500	4,545	5,779	2,635	3,222	152	185	140	3,413	5,452	44,484
1936	3,973	20	20	62,758	429,782	1,944	2,501	4,983	7,305	4,408	6,314	2,750	3,534	273	363	169	3,211	5,358	66,111
1937	3,812	15	15	73,629	441,560	2,224	2,716	5,288	8,174	4,228	6,549	3,297	4,324	449	554	186	3,315	5,629	67,758
1938	3,740	19	19	65,732	448,643	2,267	2,793	6,462	8,781	5,198	7,049	3,402	4,344	434	575	213	3,246	5,578	88,184

a Not available. *b* Excluding cut for Green Fodder.

Table No. 35.

PRODUCE OF PRINCIPAL CROPS GROWN IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Quantity of Produce.												
	Grain Crops							Potatoes.		Pumpkins.	Cotton. (Seed Cotton).	Sugar-cane.	
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Weight of Cane Crushed.	Sugar made at 94 % Net Titre.
			Malting.	Other.									
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons	Lb.	Tons.	Tons.
1929	4,235,172	38,494	139,604	65,963	4,376,412	364	12	13,214	7,017	27,591	8,024,502	3,581,265	518,516
1930	5,107,561	94,452	134,226	39,337	4,565,850	330	..	18,489	7,109	38,354	17,022,897	3,528,660	516,783
1931	3,863,894	20,352	28,882	7,515	3,780,597	54	..	17,189	6,802	33,222	15,244,644	4,034,300	581,276
1932	2,493,902	58,729	67,792	33,241	1,658,853	239	..	14,017	4,706	18,153	6,270,116	3,546,370	514,027
1933	4,361,614	69,534	99,786	52,694	3,715,764	840	..	20,123	5,344	33,440	17,718,306	4,667,122	638,559
1934	4,076,181	82,198	111,588	45,016	4,142,079	1,927	..	21,627	9 577	31,632	26 924,179	4,271,380	611,161
1935	2,690,316	119,459	64,891	26,475	3,504,045	2,764	..	24,765	10,691	33,341	20,785,418	4,220,435	610,080
1936	2,016,236	22,417	27,302	10,076	3,148,814	41	..	15,826	11,959	40,038	19,198,600	5,170,571	744,676
1937	3,749,443	79,323	84,598	36,423	2,628,458	24	..	16,565	10,047	[illegible]	11,792,828	5,132,886	763,242
1938	8,583,736	93,128	183,625	62,004	3,733,424	591	..	19 183	18,159	56,606	13,687,872	5,342,193	778,064

Year.	Quantity of Produce—*continued.*												
	Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Ensilage.	Grape Vines.		Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Strawberries.	Apples.
						Grapes.	Wine.						
	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Gallons.	Bunches.	Dozens.	Bushels.	Bushels.	Quarts.	Bushels.
1929	4,870	192,943	8,227	79,583	2,933	4,230,703	48,174	2,940,683	857,116	272,801	45,623	330,287	177,062
1930	10,098	58,594	6,458	87,146	4,880	5,366,662	48,899	3,068,143	1,000,508	308,967	31,924	209,413	217,317
1931	8,276	260,670	8,455	91,275	5,819	4,917,808	41,456	2,950,678	1,181,654	304,661	36,781	148,329	179,745
1932	6,878	2,303,861	4,200	82,104	6,305	5,296,980	35,301	1,869,883	1,175,870	321,995	23,035	111,667	233,565
1933	9,950	2,079,754	5,580	144,250	8,515	5,053,022	31,796	2,027,505	1,355,300	294,396	11,126	158,732	298,372
1934	9,712	1,025,049	13,766	154,157	7,566	4 825,223	38,051	1,905,900	1,126,831	388,207	30,133	205,005	284,893
1935	10,239	1,555,083	6,210	122,687	5,644	5,219,521	22,569	1,733,378	1,333,415	287,769	18,715	218,000	249,998
1936	10,204	2,005,031	9,230	73,787	*a*	4,997,851	29,121	1,447,244	1,227,734	307,439	51,152	246,973	215,279
1937	7,494	2,317,066	7,077	98,218	14,831	5,322,885	16,909	1,517,451	1,331,091	293,113	72,092	310,835	269,410
1938	6,691	2,197,240	9,980	109,761	17,772	5,931,022	44,594	1,758,898	1,847,673	354,052	62,012	548,233	282,158

a Not available.

Table No. 36.

SHOWING THE GROSS VALUE OF PRINCIPAL CROPS RAISED IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugar-cane. (Crushed).	Arrowroot (Tubers).
			Malting.	Other.				English.	Sweet.				
	£	£	£	£	£	£	£	£	£	£	£	£	£
1929	1,036,735	9,664	29,520	13,605	1,016,604	146	4	225,739	52,335	255,217	186,121	7,163,024	9,740
1930	1,030,642	22,039	24,608	6,843	965,487	132	..	165,245	25,918	138,234	354,652	7,040,415	21,206
1931	753,435 *a*	3,166	3,476	792	518,257	22	..	132,499	23,342	144,350	307,975 *k*	7,326,233	11,586
1932	447,169 *b*	10,400	10,169	4,986	389,345	74	..	108,630	21,043	89,252	125,106 *l*	6,852,717	12,037
1933	748,289 *c*	11,372	17,252	8,562	681,223	266	..	125,769	14,919	109,377	282,740 *m*	7,247,122	13,432
1934	776,689 *d*	14,214	19,501	6,253	562,095	434	..	180,225	28,730	110,224	397,263 *n*	6,944,764	10,683
1935	597,059 *e*	20,900	11,895	4,695	674,117	690	..	229,076	42,764	134,321	376,456 *o*	7,073,049	10,239
1936	580,000 *f*	3,735	6,047	2,250	714,570	12	..	170,130	59,795	143,253	330,324 *p*	8,297,838	10,500
1937	781,135 *f*	15,535	18,998	6,752	695,900	10	..	124,267	60,282	266,943	205,025 *q*	8,572,730	12,630
1938	1,053,190 *g*	20,178	39,837	9,550	740,962	197	..	211,013	81,716	207,152	230,339 *r*	8,691,656	15,555

Year.	Tobacco (Cured Leaf).	Coffee.	Hay (All Kinds).	Ensilage. *	Grapes.	Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Straw-berries.	Apples.	Tomatoes.	Cabbages and Cauli-flowers.	All Crops.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£
1929	12,670	309	447,284	6,334	81,241	927,923	212,326	175,900	18,971	33,143	95,355	272,884	127,076	13,803,792
1930	5,640	242	430,571	9,939	85,776	903,113	212,528	122,943	10,603	14,615	77,601	208,743	85,352	12,821,665
1931	27,153	318	401,133	11,238	79,889	621,983	254,382	116,787	12,945	7,880	67,195	204,396	75,017	12,190,794
1932	230,386	158	413,961	12,668	93,319	427,208	196,914	122,808	7,432	7,038	94,337	165,272	80,406	11,305,731
1933	129,985	209	608,165	12,971	68,931	470,776	203,743	119,905	3,410	9,425	96,814	192,818	76,634	12,303,271
1934	69,400	516	614,010	11,706	68,715	335,685	207,870	97,900	10,193	4,615	89,940	194,140	47,333	11,905,806
1935	140,880	232	607,570	10,545	66,047	302,560	247,085	105,623	8,185	8,175	70,987	208,531	74,136	12,380,165
1936	165,916	345	452,000	†	70,911	282,850	245,230	109,637	16,380	10,290	70,196	213,125	80,415	13,557,000
1937	197,047	354	619,998	29,306	56,771	383,764	268,681	116,031	22,170	10,361	80,966	198,005	63,344	14,931,267
1938	184,385	499	577,441	31,496	88,635	343,724	392,340	116,636	24,506	18,275	112,521	227,035	67,458	15,564,303

a Includes Bounty, £72,188.
b Includes Bounty, £40,744.
c Includes Bounty, £76,455.
d Includes Bounty, £100,700.
e Includes Relief and Special Assistance, £42,799.
f No Bounty, Relief, or Special Assistance was paid.
g Includes Bounty under the Wheat Industry Assistance Act, £149,336.

k Includes Bounty, £90,733.
l Includes Bounty, £30,833.
m Includes Bounty, £73,540.
n Includes Bounty, £84,024.
o Includes Bounty, £106,539.
p Includes Bounty, £87,778.
q Includes Bounty, £41,772.
r Includes Bounty, £106,171.

* Not included in Total Value all Crops;
† Not available.

Table No. 37.

AVERAGE YIELD PER ACRE OF PRINCIPAL CROPS IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Grain Crops.						Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugar.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Grapes.	Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Strawberries.	Apples.
	Wheat.	Oats.	Barley.		Maize.	Rye.	English.	Sweet.			Cane per Acre Crushed.	Sugar per Acre Crushed.											
			Malting.	Other.																			
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Doz.	Bushels.	Bushels.	Quarts.	Bushels.
1929	20·75	19·22	22·10	19·20	25·50	13·48	1·63	3·40	2·51	535	16·67	2·41	8·10	1,213	748	1·60	2,616	228	253	95	251	1,815	51
1930	18·76	18·40	21·83	17·21	26·52	11·38	1·80	3·53	2·66	751	15·89	2·33	13·29	825	538	1·67	3,533	244	251	110	206	1,210	63
1931	15·53	14·92	16·98	14·40	25·60	7·71	1·66	3·63	2·53	679	17·29	2·49	10·49	682	497	1·53	3,248	271	269	103	252	1,177	48
1932	9·97	15·73	20·70	21·94	16·79	13·28	1·44	2·29	1·90	209	17·30	2·51	9·95	604	600	1·28	3,340	258	259	114	175	980	66
1933	18·80	13·35	17·42	17·35	22·26	17·87	1·69	2·98	2·47	260	20·46	2·80	12·48	519	1,116	1·55	3,186	299	298	109	63	1,260	86
1934	18·38	18·00	16·91	14·99	25·79	25·69	1·85	4·22	2·58	620	19·56	2·80	11·63	493	765	1·78	3,181	271	245	137	171	1,486	83
1935	11·23	17·51	15·14	12·64	22·27	17·17	1·82	4·27	2·49	378	18·47	2·67	11·91	499	444	1·72	2,578	247	293	109	123	1,557	73
1936	7·11	2·83	6·32	4·32	17·37	1·52	1·18	4·12	1·94	309	21·03	3·03	11·80	505	462	1·18	2,571	290	279	112	187	1,461	67
1937	10·05	10·29	14·28	13·33	15·09	12·00	1·53	3·62	2·30	224	20·94	3·11	9·68	608	472	1·33	2,393	287	315	89	161	1,671	81
1938	19·42	10·77	17·82	16·83	20·36	9·09	1·85	5·24	2·50	206	21·21	3·09	8·40	587	525	1·49	2,616	272	355	104	143	2,574	87
Average*	15·00	14·10	16·95	15·22	21·76	12·92	1·65	3·73	2·39	417	18·88	2·72	10·77	654	617	1·51	2,926	267	282	108	173	1,519	71

* Average of annual yields per acre during last ten years.

Table No. 38.

AVERAGE YIELD PER ACRE OF CROPS IN EACH DIVISION OF THE STATE FOR THE YEAR 1938.

Division.	Grain Crops.						Potatoes.		Sugar-cane (to Acres Crushed)	Cotton (Seed Cotton).	Arrow-root (Tubers).	Tobacco (Dried Leaf).	Coffee.	Pump-kins.	Hay (All Kinds).	Grapes.	Bananas.	Pine-apples.	Oranges and Man-darins.
	Wheat.	Oats.	Barley.		Maize.	Rye.	English.	Sweet.											
			Malting.	Other.															
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Bunches.	Dozens.	Bushels.
Moreton	13·65	21·15	18·06	14·96	20·06	2·18	1·83	5·02	25·01	292	8·67	167	715	2·40	1·74	2,560	281	384	120
Wide Bay	13·89	13·13	9·29	10·84	16·83	5·56	1·80	5·91	22·37	260	5·10	478	200	2·85	1·56	1,292	207	317	116
Downs	19·95	10·22	17·96	17·11	16·04	12·58	1·60	2·00	..	211	..	955	..	1·98	0·99	2,986	..	..	50
Maranoa	12·95	..	..	..	3·19	..	..	..	..	59	..	..	..	0·52	1·00	1,645	..	..	52
South-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	1·00	..	3,376	..	..	57
South Queensland	19·43	10·77	17·82	16·78	17·64	9·09	1·81	5·35	22·67	256	8·40	935	525	2·50	1·46	2,627	270	370	114
Port Curtis	18·94	7·5	..	24·90	8·37	..	1·80	2·33	12·65	188	3·00	519	..	2·70	1·58	2,463	293	272	95
Central-Western	..	..	..	..	..	..	2·10	..	..	10	..	..	..	0·50	..	1,763	..	..	97
Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,300	..	..	..
Central Queensland	18·94	7·5	..	24·90	8·37	..	1·80	2·33	12·65	188	3·00	519	..	2·69	1·58	2,402	293	272	96
Edgecumbe	..	..	..	..	19·05	..	3·13	3·07	19·43	171	..	403	..	1·88	2·47	2,655	448	222	94
Rockingham	7·45	..	..	..	40·25	..	2·15	4·88	22·33	186	..	528	..	1·45	3·09	1,529	185	209	70
Peninsula	..	..	..	..	15·23	..	..	0·67	..	375	..	..	..	1·67	..	..	43	..	16
North-Western	..	..	..	..	..	..	3·00	..	..	..	..	..	..	2·00	..	431	60	..	39
North Queensland	7·45	..	..	..	39·86	..	2·78	4·56	20·89	179	..	505	..	1·82	2·84	2,247	296	219	74
Total Queensland—																			
1938	19·42	10·77	17·82	16·83	20·36	9·09	1·85	5·24	21·21	206	8·40	587	525	2·50	1·49	2,616	272	355	104
1937	10·05	10·29	14·28	13·33	15·09	12·00	1·53	3·62	20·94	224	9·68	608	472	2·30	1·33	2,393	287	315	89
Increase, 1938	9·37	0·48	3·54	3·50	5·27	..	0·32	1·62	0·27	..	..	..	53	0·20	0·16	223	..	40	15
Decrease, 1938	..	..	..	..	..	2·91	..	..	..	18	1·28	21	..	..	..	..	15	..	..

Table No. 39.

RETURN SHOWING THE AREA, YIELD, AND GROSS VALUE OF CROPS FOR THE YEAR 1938.

Description of Crop.		Area not Bearing.	Area Bearing.	Yield.	Gross Value. *a*
		Acres.	Acres.		£
Cereals	Barley, Malting	..	10,304	183,625 bushels	39,837
	Barley, Other	..	3,685	62,004 bushels	9,550
	Maize	..	183,415	3,733,424 bushels	740,962
	Oats	..	8,650	93,128 bushels	20,178
	Wheat	..	442,017	8,583,736 bushels	1,053,190*b*
	Rye	..	65	591 bushels	197
Grass Seed		..	2,664*c*	12,437 cwt. *c*	16,974 *c*
Green Forage (All Kinds)		..	448,643	..	1,120,892
Hay	Lucerne	..	50,228	90,157 tons	473,324
	Oaten	..	4,901	6,049 tons	48,392
	Wheaten	..	6,628	7,647 tons	32,500
	Other	..	3,975	5,908 tons	23,225
Straw	Oaten	..	..	227 tons	1,059
	Wheaten	..	..	683 tons	3,187
	Other	..	..	..	..
Pulse	Beans	..	433	34,311 bushels	17,155
	Peas	..	113	5,194 bushels	1,948
Root Crops	Arrowroot (Tubers)	..	797	6,691 tons	15,555
	Cassava	..	9	14 tons	28
	Ginger	..	2	19,180 lb.	399
	Mangolds	..	1,838	10,919 tons	21,838
	Onions	..	1,001	56,625 cwt.	28,312
	Potatoes, English	..	10,389	19,183 tons	211,013
	Potatoes, Sweet	..	3,465	18,159 tons	81,716
	Turnips (including Swede Turnips)	..	166	670 tons	4,467
Grapes	For Table Use	526	1,889	5,180,224 lb.	86,214
	For Wine		378	750,798 lb.	2,421
	For Drying Purposes	..	..	..	..
Sugar-cane		84,098 *d*	251,847 *e*	5,342,193 tons *e*	8,691,656
Sugar-cane (cut for plants)		..	11,254	196,715 tons	304,900
Tobacco		..	3,740	2,197,240 lb.	184,385
Market Gardens		..	1,546	..	83,665
Orchards and Fruit Gardens	Apples	2,332	3,246	282,158 bushels	112,521
	Apricots	80	165	10,457 bushels	6,223
	Avocadoes	11	1	52 bushels	78
	Bananas	2,319	6,462	1,758,898 bunches	343,724
	Cape Gooseberries	..	12	26,909 quarts	673
	Cherries	1	4	301 bushels	361
	Citrons, Grape Fruit, and Seville Oranges	10	15	1,548 bushels	310
	Custard Apples	63	272	45,038 bushels	13,455
	Figs	..	19	7,311 bushels	2,386
	Lemons	147	266	30,458 bushels	8,503
	Mangoes	141	434	62,012 bushels	24,506
	Nectarines	6	35	3,899 bushels	2,079
	Nuts (Almonds, Litchi, Pecan, Queensland, Tung Oil)	105	51	428 bushels	513
	Oranges and Mandarins	942	3,402	354,052 bushels	116,636
	Papaws	308	661	287,841 dozen	21,791
	Passion Fruit	..	351	17,657 bushels	8,768
	Peaches	276	1,100	82,370 bushels	30,875
	Pears	109	251	27,596 bushels	8,508
	Persimmons	..	1	79 bushels	28
	Pineapples	1,851	5,198	1,847,673 dozen	392,340
	Plums	273	943	60,622 bushels	24,156
	Quinces	1	12	781 bushels	139
	Strawberries	..	213	548,233 quarts	18,275
	Water Melons and Rock Melons	..	584	42,829 dozen	14,611
	Other (Gardens and Orchards)	11	181	..	6,516
Other Crops	Broom Millet	..	565	134,788 lb.	2,718
	Cabbages and Cauliflowers	..	1,485	311,347 dozen	67,458
	Canary Seed	..	31,250	77,614 cwt.	70,000
	Coffee	..	19	9,980 lb.	499
	Copra	..	360	..	..
	Cotton	..	66,470	13,687,872 lb.	230,339 *f*
	Cowpeas	..	507	3,601 bushels	1,440
	Cucumbers	..	480	210,120 dozen	19,865
	Flax (Fibre)	..	47	..	..
	Flax (Linseed)	..	25	2,352 lb.	20
	Green Beans	..	2,983	238,351 bags	113,822
	Green Peas	..	1,110	61,254 bags	19,794
	Lucerne Seed	..	80	94 cwt.	658
	Millet Seed	..	129 *g*	986 cwt. *g*	502 *g*
	Panicum, Setaria, etc., Seed	..	8,787	57,442 cwt.	17,951
	Peanuts	..	21,220	17,225,845 lb.	107,226
	Pumpkins	..	22,682	56,606 tons	207,152
	Sunflower Seed	..	115	569 cwt.	710
	Tomatoes	..	4,944	492,020 bushels	227,035
Total under Crop		93,610	1,641,179	..	15,564,303

a By "Gross Value" is meant the value which these crops would have realised in the principal wholesale markets of the State.

b Includes Bounty under The Wheat Industry Assistance Act, £149,336.

c Grass Seed includes :—	Acres.	Cwt.	£
Molasses	64	66	92
Prairie	119	477	667
Rhodes	188	258	361
Rye Grass	4	40	56
Sorghum	78	933	933
Sudan	2,141	10,506	14,708

d Excludes areas cut for plants (11,254 acres) and green fodder (3,602 acres).

e Area cut for crushing and tons of cane crushed.

f Includes Bounty, £106,171.

g Millet Seed includes :—	Acres.	Cwt.	£
French	28	249	131
Jap.	3	14	4
White	22	240	126

Table No. 40.

DATES OF PLANTING AND HARVESTING.

PRINCIPAL CROPS IN QUEENSLAND.

Owing to the great size of Queensland, with its irregular rainfall and great climate differences, this information is of necessity rather indefinite. Times of planting and consequently times of harvesting vary according to the local conditions.

The following are the dates of planting and harvesting as nearly as can be ascertained :—

Crop.	Time of Planting.	Time of Harvesting.
Arrowroot	August to October	June, July, August
Barley { (1) Skinless (2) Cape (3) Malting } ..	For green fodder; from third week in February at intervals until about second week in July. For grain; usually sown in May	From mid October until end of November
NOTE.—Skinless and Cape Barley are mostly for feeding off, and malting barley for grain, although of course Skinless and Cape are also grown for grain.		
Canary Seed	Early planting for dual purposes, both fodder and seed made about the second to third week in April. Main planting in May, but may extend under favourable conditions till August	From mid October to end of November
Cotton	From first September to mid December, Central and South; and till end of February, North	Beginning of March to end of October
Hay (1) Wheaten	From beginning of April to about middle of June, according to district	October and early November
NOTE.—A fair amount of hay is grown below the range between Toowoomba and Brisbane and harvested usually in October, as early maturing varieties are used.		
Hay (2) Oaten	March to end of May	Mid October to November
Maize	August to second week in January, according to district. Earlier districts, August, are usually fairly free from frost and "catch" crops are commonly planted. Main planting season in November in Southern and Central Queensland. In North Queensland (mainly Atherton Tableland) the season synchronises with the commencement of the wet season, usually starting about 1st January	May extend from latter end of December until latter end of August. Main harvest May, June, July
Potatoes	February and August	Three to four months after planting
Sorghum, Millet, &c., (including Broom Millet and Millet grown for Fodder)	August to end of January, according to district	Sorghums about five months from planting. Millets earlier—ten weeks
NOTE.—The practice of late sowing is followed in some districts to synchronise with the wet season. Broom Millet commonly planted from September to November (inclusive), is harvested within five months of time of planting Seed.		
Sugar	April to October	Crushing from June to December. Cane-cutters start a day or two ahead of the crushers and thus keep them supplied
Tobacco	Mid October to early December, but late planting not advocated	April
Wheat	Main season May and June. Range of planting April to first week in August. Customary in some districts to plant slow-maturing varieties in April, either feeding it off to dairy cattle and sheep or ultimately allowing it to mature into grain. In some districts on the Downs, slow-maturing varieties for feeding off are sown in March.	Maranoa is earliest district. Harvesting in this district starts in some seasons in second week of October and continues to first week of November. In Darling Downs and other districts harvesting usually starts about the first week of November and is carried on until the end of that month.
	FRUIT.	
Bananas	October, November, December, January, and February	All year
Citrus Fruits	May to August, February	April to October
Custard Apples	June to August	May to August
Deciduous Fruits	May to August	End of November to end of March
Grapes	August and September	December to end of April
Mangoes	February, June, and July	September to March
Papaws	September and October, February and March	Autumn and Winter
Passion Fruit	September and October, February and March	All year. Main crops Summer and Autumn. Light Spring crop.
Pineapples	September to February	Christmas to end of March and July and August are two main crops. Off crops any time of year
Strawberries	March and April	May and October

Brisbane, 1st May, 1940.

COLIN CLARK,
Government Statistician.

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ARTHUR HENRY TUCKER, Government Printer, Brisbane.